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ANTITYPHOID VACCINATION IN THE ARMY DURING 1913

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The favorable results obtained with antityphoid vaccine during former years[1] led us to expect much from the measure, but the remarkable records of the past year, 1913, have far surpassed our expectations, and are of so striking a character that their publication seems desirable.

As will be shown in the accompanying charts and tables, in the entire army of over ninety thousand men, only three cases of typhoid fever, with no fatalities, have occurred during the year 1913.

The year 1911 marked the beginning of compulsory vaccination in the Army for all persons under 45 years of age; but the full effect of such vaccination was not immediately seen, since five times as many cases occurred that year as during 1913, and it is very probable that the rate has now reached an irreducible minimum.

TABLE 1.—TYPHOID FEVER, ENLISTED AMERICAN TROOPS SERVING IN U. S. PROPER *

Year	Mean Strength	Absolute Cases	Number Deaths	To Each 1,000 Soldiers of the Command the Ratios Are: For Cases	For Deaths
1907.....	35,132	124	7	3.53	.19
1908.....	46,316	136	11	2.94	.23
1909.....	57,124	173	16	3.03	.28
1910.....	55,680	129	9	2.32	.16
1911.....	55,240	44	6	0.80	.11
1912.....	58,119	15	2	0.26	.03
1913.....	59,608	2	0	.03	.00

* The vaccination was voluntary in 1909, 1910 and part of 1911, but compulsory in part of 1911 and in 1912 and 1913.

Table 1 shows that the number of cases in the United States proper has fallen from 3.53 per thousand men to 0.03 in the six years; the death-rate has fallen from 0.28 in 1909 to zero in 1913. In both instances the greatest improvement has been during the past three years, since the vaccination was made compulsory.

Table 2 includes officers and enlisted men, and shows the number of cases and deaths each year since the typhoid prophylactic was first used. It also shows the number of cases and deaths each year occurring among the vaccinated serving within the continental limits of the United States, and for the past two years, those infected with typhoid fever before enlistment and who developed the fever before vaccination could be carried out. No doubt some men have enlisted each year who were at the time in the incubation stage of the disease; but accurate information is available for the past two years only.

TABLE 2.—NUMBER AND PROPORTION OF TYPHOID CASES CONTRACTED BEFORE ENLISTMENT AND AMONG THE PROTECTED (UNITED STATES PROPER ONLY) OFFICERS AND ENLISTED MEN

Year	Total Cases	Total Deaths	Infected Prior to Enlistment No.	Among the Vaccinated Cases No.	Deaths
1909.....	173	16	?	1	0
1910.....	129	9	?	4	0
1911.....	44	6	?	7	0
1912.....	18	3	5	6	0
1913.....	2	0	2	0	0

The conditions of service, except perhaps along the Mexican border, are much more favorable in the United States proper than in our over-sea dependencies for practically all diseases; yet during the past year only one case of typhoid fever occurred outside of the United States, and that in China, among the 31,038 men serving abroad.

The results for the entire army at home and abroad, given in Table 3, demonstrate the efficiency of the protection under all conditions of life.

TABLE 3.—TYPHOID FEVER, 1907 TO 1913, FOR THE WHOLE ARMY, OFFICERS AND ENLISTED MEN, AMERICAN AND NATIVE TROOPS

Year	Mean Strength	Cases No.	Cases Ratio per 1,000 of Mean Strength	Deaths No.	Deaths Ratio per 1,000 of Mean Strength	Percentage of Total Cases	Occurring Among Those Who Were Vaccinated Cases	Occurring Among Those Who Were Vaccinated Deaths
1907	62,523	237	3.79	19	.30	8.0	..	..
1908	74,692	239	3.20	24	.31	10.0	..	..
1909	84,077	282	3.35	22	.26	7.8	1	0
1910	81,434	198	2.43	14	.17	7.1	7	0
1911	82,802	70	.85	8	.10	11.4	11	1
1912	88,478	27	.31	4	.044	14.8	8	0
1913	90,646	3	.03	0	.0	0.	1	0

The statistics for enlisted men in the United States proper can be presented much more effectively in the charts.

Chart 1 shows the admission-rates per thousand (that is, the number of cases) for each year from 1901 to date.

The best record obtained by sanitary measures alone is noticed in the year 1908; vaccination, beginning in 1909, has steadily diminished the number of cases, until in 1913 the rate was reduced to five cases per hundred thousand men. What this signifies may be appreciated when one realizes that the civil *death-rate* (not case-rate), in the registration area of the United States, was 16.5 per hundred thousand of population

1. Russell, F. F.: Results of Antityphoid Vaccination in the Army in 1911, and Its Suitability for Use in Civil Communities, THE JOURNAL A. M. A., May 4, 1912, p. 1331; Antityphoid Vaccination in Children, ibid., Feb. 1, 1913, p. 344; Progress in Antityphoid Vaccination During 1912, ibid., Aug. 30, 1913, p. 666.

for the year 1912, the last for which the statistics have been published by the Bureau of the Census.

In Chart 2, giving the death-rates for typhoid fever, we see that the best record previous to the introduction of vaccination was 0.19 per thousand, made in 1907; this has now been far surpassed by the truly remarkable record of no deaths whatever from this disease in 1913.

Chart 3 presents a quantitative measure of typhoid fever, in what is called the constantly non-effective rate; this is a statement for each day during the year of the average number of men per thousand incapacitated for full duty by typhoid fever. This ratio is generally acknowledged to be the truest statistical measure of the loss of efficiency from any given cause. The lowest rate obtained with sanitary measures alone was, 0.5 in 1908; this has been rapidly reduced to 0.003 in 1913. In other words, there was in 1913 only one one hundred and sixty-seventh of the loss of time from

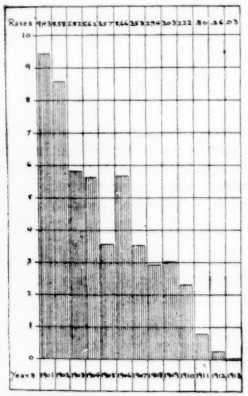

Chart 1.—Admission-rates for typhoid fever, United States (enlisted men).

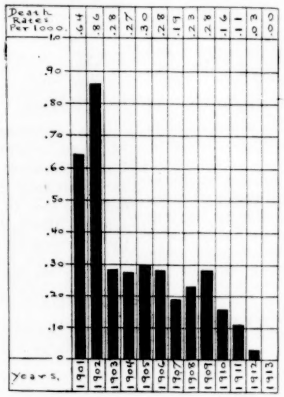

Chart 2.—Death-rates for typhoid fever, United States (enlisted men).

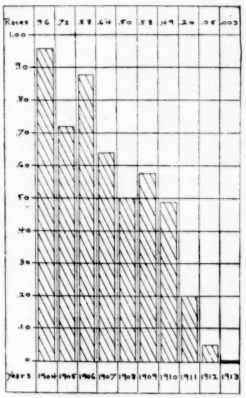

Chart 3.—Non-effective rates for typhoid fever, United States (enlisted men).

duty because of typhoid fever which occurred during the record year 1908, before the introduction of vaccination. These three charts are absolute proof of the efficacy of the typhoid prophylactic.

Have any harmful effects been produced by the typhoid prophylactic? This question may be definitely and decisively answered by the plain statement that no harmful effects have been produced. In the Surgeon-General's annual report are records not only of typhoid fever, but of all other diseases affecting soldiers' health. Since the annual report itself may be consulted by those interested in the subject, in almost any medical library, reference will be made hereto to only two points: first, the diseases which were more prevalent during 1912 than during the decade ending in 1911, and second, the effect of vaccination on the rates for tuberculosis, if there has been any.

In answer to the first question we find that the report of the Surgeon-General[2] states that only eight statistical groups of diseases show an increase in the case-rates per thousand; these are eruptive fevers, other than measles, small-pox and typhoid (1.9 to 3.65); diphtheria (0.49 to 1.01); mumps (11 to 16.99); cancer and other malignant growths (0.21 to 0.22); diseases of the brain and spinal cord (2.90 to 4.09); pleurisy (3.03 to 3.22); tonsillitis and other diseases of the pharynx (64.78 to 65.33), and appendicitis (4.54 to 6.59). There is no reason for believing that the antityphoid vaccination is in any way responsible for these changes.

In answer to the second question we find that the case-rate for tuberculosis of all kinds shows a decrease from 4.51 per thousand for the decennial period ending 1911 to 3.49 for the year 1912, a decrease of 22 per cent. On page 70 of the same report is given a tabular statement of all forms of tuberculosis occurring in enlisted men for each year from 1908 to 1912. This table shows, also, not only that tuberculosis has not increased since the introduction of typhoid vaccination, but that it has actually decreased, a result due, no doubt, to improved sanitation and to the care used in the physical examination of recruits.

TABLE 4.—TUBERCULOSIS, ALL KINDS, ENLISTED MEN ONLY; CASE-RATE PER THOUSAND

Year	United States	Philippine Islands	Alaska	Hawaii	Transports	Total
1908....	3.99	6.10	2.96	3.92	3.46	4.39
1909....	4.53	5.06	3.76	2.96	3.00	4.53
1910....	3.34	5.46	1.85	4.10	0.80	3.65
1911....	3.64	3.77	2.68	1.99	1.76	3.55
1912....	3.25	5.02	4.18	2.07	2.74	3.49

The rate per thousand has decreased from 4.39 in 1908 to 3.49 in 1912, a diminution of 20 per cent. during the past five years.

From the accompanying tables and charts the conclusion is inevitable that the prophylactic vaccine as used in the Army has given almost absolute protection against typhoid fever without producing untoward

2. Ann. Report, Surg.-Gen., War Dept., Washington, 1913. Table 68, p. 236.

effects of any character, showing definitely that the vaccination is both efficient and harmless.

In the annals of preventive medicine there is only one other campaign with which to compare this, and that is the practical extermination of small-pox by vaccination. In a previous article[3] it has been pointed out that in the suppression of infectious diseases, sanitarians encounter two types of infection which differ from one another in the following way:

First, yellow fever, malaria, Malta fever, cestode infections and to a great extent plague, etc., require an intermediate host for the completion of the life-cycle of the parasite, or its conveyance from the infected to new victims.

The second group is composed of diseases of mankind only, the infection passing directly or indirectly from one human being to another, no animal or insect host intervening; examples of this class of diseases are typhoid fever, small-pox, pulmonary tuberculosis, measles, scarlet fever and diphtheria.

In the first group the chain of infection has many links, the breaking of any one of which stops the spread of the disease; in the second, the chain consists of two links only, both human beings, and the inherent difficulties of breaking this short chain of infection are much greater than in the first group, in which the chances are many times as many. For this reason the results for typhoid fever given here should be compared only with the results obtained against other diseases of the same class.

DRAINAGE VERSUS IMMEDIATE SUTURE OF THE COMMON DUCT

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Drainage of the common duct presents three dangers: much bile is lost, cicatricial contraction occasionally occurs, and should the drain-tube be occluded, or even if it be not occluded, bile may escape into and infect the peritoneal cavity beyond the field of operation.

Owing to an interesting physiologic fact, the loss of bile may become a serious danger—a danger which is usually overlooked—as normally the bile passes through the intestinal tract, and the bile-salts are reabsorbed, return to the liver, again become a constituent of fluid bile, and thus continue their circuit. The continuous loss of bile by drainage in a good-risk patient may cause no apparent damage, but in elderly subjects and in poor risks from any cause, the steady loss of bile-salts and of fluid may prove fatal. In gall-bladder drainage the bile can be collected and, as Yates has suggested, may be returned to the bowel; but in drainage of the common or hepatic duct much bile is sure to be lost beyond recovery. Occasionally also the bile may leak into and infect the abdominal cavity beyond the field of operation—a circumstance that may prove fatal despite the greatest experience and care.

A third danger is also important: the presence of a drain-tube in a bile-duct may of itself cause a partial or a complete stricture of the duct. I venture to assert that if a thousand normal common ducts were considerably traumatized and then drained by close-fitting drainage-tubes snugly sewed in and left for a considerable time, there would result a certain number of partial or complete strictures, just as strictures in the cystic duct are produced by the lodging of a stone, and just as any other duct may be occluded by the effect of the presence of a foreign body.

These three dangers account in large measure for the difference between the mortality rates after operations for stone in the common duct and after operations for stone in the gall-bladder. The records of operations on the gall-bladder and ducts performed by my associates, Dr. Bunts and Dr. Lower, and by myself, and the records of the surgical service of the Lakeside Hospital, demonstrate the truth of the foregoing statements.

It is obvious therefore that if drainage after common-duct operations could be safely dispensed with, the mortality and the morbidity would by so much be further controlled. Why not close the common duct immediately? In the cases in which there is no jaundice, there is free drainage into the intestine through a natural down-hill drainage-tube. Is any other surgical field provided with such an ideal drainage-tube as the common duct? And yet we add to this ideal down-hill natural drainage a foreign tube which drains straight up-hill, leaks around its base, loses bile, and infects the peritoneum; while, in addition, in almost every case, bile still gets by the drainage-tube and passes into the intestine, as is evidenced by its presence in the movements. Why then is the common duct drained as a matter of routine? Undoubtedly because *the duct is handled in a needlessly rough manner when the stone is extracted.*

That immediate closure will probably result favorably is indicated by the fact that the operation is rarely performed at the time of complete occlusion of the duct. If there be complete occlusion, then the extraction of the stone may leave an occluded common duct; but even in that case, if the gall-bladder can be utilized for drainage, the best procedure is to close the common duct at once, and let the gall-bladder be used as a drain until the lumen of the common duct is again opened. Surely restoration of the patency of the duct will occur more rapidly without the presence of a foreign body than with one. In the great majority of cases, however, the common duct is open—at least intermittently—before the operation; in many cases there is no obstruction—no jaundice. Under these conditions would any one think of drainage if the common duct were in a superficial position, easily accessible? The deep position of the common duct, hidden under adhesions as it is frequently, handicaps the operator so that his work is done without the definiteness and innocuousness of sharp dissection, but by tearing; and when the duct is opened its interior too is needlessly traumatized. Would any one consider using a similarly rough technic in operating on any superficial organs or structures?

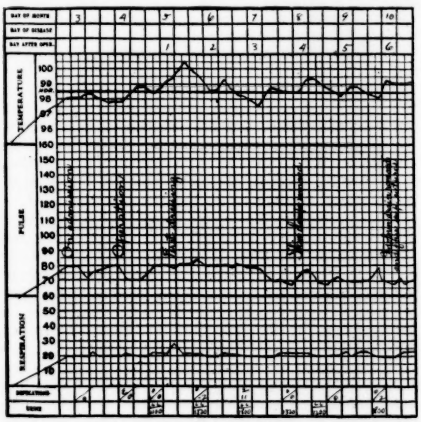
To overcome the needless local injury, and to reduce the necessity for drainage to a minimum, I have evolved a sharp dissection technic, the possibilities of which are well illustrated by the following case:

A patient, aged 71, years before had had an abscess in the gall-bladder region, the result of a perforation of the gall-bladder, which was opened and drained. Gall-stone symptoms continued and another operation was performed later, but on account of the dense adhesions of the viscera to the abdominal wall, a satisfactory exposure could not be made, especially as the patient was already in a serious condition. The gall-bladder was drained in the hope that relief would

3. Russell, F. F.: Prevention and Treatment of Typhoid Fever with Antityphoid Vaccine, Boston Med. and Surg. Jour., Jan. 5, 1911.

follow; but intermittent pain, chills and jaundice continued for a year, at which time I performed the following operation:

Under nitrous-oxid-oxygen anesthesia, I made a wide exposure of the biliary field by a modified Wilms incision. This gave ample room for making a sharp-knife division of the firm adhesions between the viscera, as a result of which I gained a clear exposure of the dilated, stone-impacted common duct. Under the direct guidance of the eye and with a *sharp knife* a rather long longitudinal incision was made over the stones in the enlarged pathologic common duct. The incision exposed the stones so completely that when they were gently turned out not even a drop of blood came from the mucous membrane. This ample incision in the duct gave an opportunity for not only a complete, but also an *absolutely innocuous* exploration of the remainder of the duct. Six large stones were removed, some of which were embedded firmly. At the end of these procedures we had before us a common duct whose only injury was the sharp longitudinal division of its wall. What possible valid reason existed for draining this large patent duct whose interior was uninjured by the operation? Surely the drainage was no less free without than with the stones. The duct was sutured with as much care and accuracy as is used in suturing the intestines, a curved round needle and a double row of fine chromic gut sutures being employed. A piece of iodoform gauze was sewed with plain catgut to an adhesion below and external to the suture-line in the duct, but coming nowhere into actual contact with the suture-line. At the close of the operation the patient's pulse was the same as it had been in bed the day before. The entire wound healed by first intention, bile passing from the first through the ampulla. The accompanying chart shows the striking clinical result.



Clinical record of operation for common-duct stone performed under anoci-association, nitrous-oxid-oxygen.

To accomplish the bloodless innocuous dissection which is the goal of the anoci technic, all adhesions are carefully divided with a sharp knife, the dissection being rigorously confined to the bloodless hair-line between the peritoneum and the adhesion. No blood-vessel ever crosses this white line. The whole line of dissection is therefore bloodless; no sponging is needed, and every tissue is accurately identified.

I have performed a number of common-duct operations under this technic, with a resultant uneventful convalescence such as is well illustrated by the chart shown here.

Osborn Building.

MAN, THE PRINCIPAL ETIOLOGIC FACTOR IN THE PERPETUATION OF MALARIA, WITH SPECIAL REFERENCE TO THE ENDEMICITY OF THE DISEASE IN THE TEMPERATE ZONE *

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The very brilliant results that have been obtained in certain parts of the world in the eradication of malaria by consistent campaigns against the mosquito are probably the direct result of the fact that another campaign, of equal promise, has been sadly neglected in other parts, where, by reason of soil conditions, we cannot expect to be able to eradicate, or even materially to reduce, the anopheles. I refer to the possibilities of a campaign against the sexual forms of the plasmodia in man.

The question arises, are we content to wait for the development of certain of our agricultural lands before ridding ourselves of a disease the economic loss from which is so tremendous, and a loss which, in addition to the heavy penalties imposed by death and depreciation of earning power, is actually in itself a heavy barrier to the development of these lands?

The literature on the prophylaxis of malarial fever teems with articles concerning the eradication of the mosquito, and means to prevent this insect from giving malaria to man, while little is said in reference to preventing man from giving malaria to the mosquito. The very marked success in some localities, of the fight against the mosquito should not blind us to the fact that there have also been dismal failures; for instance, the campaign at Mian Mir. Celli[1] considers that, although the destruction of mosquitoes is possible in the laboratory and in small areas, the difficulties in extensive areas are generally insuperable. Harris[2] writes:

> It is not my intention to suggest any less vigilance in destroying the anopheles mosquitoes and their breeding places, and I would urge that these measures be employed to the fullest extent possible. I do maintain, however, that the most important and the most practical measure, at this time, in the crusade against malaria, is the radical cure of those harboring parasites, because every patient cured means one less focus of infection.

If then, as I think all will agree, the eradication of malaria throughout our southland by means of the destruction of mosquitoes depends on the development and drainage of our lands, and is necessarily a matter of many years, should we not at least make an earnest effort to solve this problem by other channels? Ross,[3] one of the greatest advocates of mosquito reduction, in his report on malaria investigations in the Island of Mauritius, writes:

> The second great antimalarial measure, that of case reduction, was originated in 1900 by Koch and Celli, who, feeling doubt as to the possibility of mosquito reduction, urged that

* Read by invitation before the Fulton County Medical Society, at Atlanta, Ga., March 19, 1914.

1. Celli: Cited by Leslie: Proc. of the Imperial Malarial Conf., Simla, India, 1910, p. 8.
2. Harris, Seale: The Radical Cure of Malaria: Its Importance and How It Is Attained, THE JOURNAL A. M. A., Nov. 26, 1910, p. 1881.
3. Ross: Prevention of Malaria, Abst. Pub. Health Rep., Washington, 1910, XXV, No. 3, p. 61.

the best way of dealing with malaria would be to leave the mosquito alone and to cure the human patients from whom the insects became infected. . . . By the use of this method Stephensport, in New Guinea, was cleared of malaria in a few months.

It seems to me that the success of such a campaign in this country is assured and depends entirely on the education of the medical profession and the laity in certain fundamental principles concerning (*a*) the detection of gamete-carriers; (*b*) the formation of gametes in the circulation of man; (*c*) the transfer of these forms from one host to the other, and the evolution of the parasite in man and the mosquito; (*d*) the significance of an early diagnosis and the rational treatment of all malarial infections.

A. THE DETECTION OF GAMETE-CARRIERS

I am not so optimistic as to believe that we can in a single season detect every gamete-carrier throughout the entire country, but I do believe that a properly organized system could be provided that would gradually result in a decided reduction, if not an entire eradication, of the disease. While the recent observations of Le Prince[4] demonstrated that, in some sections at least, anopheles will fly great distances, I think there is little doubt that in the great majority of places malaria is a local infection; that is, mosquitoes acquire gametes and transmit sporozoites within a restricted area, which means that with the destruction of either the mosquitoes or the gametes within a given area, malaria would be eradicated in that area. The destruction of the mosquito having been found unfeasible, in certain sections, an equally vigilant campaign against the gametes in man's circulation is at least worthy of trial. The large number of persons who harbor gametes without any great inconvenience to themselves has been demonstrated by many observers. Fusco[5] in an examination of 147 children found 90.9 per cent. of those under 3 years, 92.03 per cent. under 7 years, and 74 per cent. of the entire number positive carriers, many of these children giving no histories of malarial infection. Ianni[6] in an examination of 2,000 individuals found the plasmodia in the blood of 53 out of 146 persons in whom there was no clinical evidence of infection. Craig[7] determined positive findings in 48.3 per cent. of 180 children examined in the Philippines. Byrd[8] in an examination of 576 white children and 85 colored children in Florida found 5.7 per cent. positive in the former group and 12.9 per cent. in the latter. Many other illustrations could be cited confirming the observations of these investigators.

Most examinations for a malarial index have been confined to schoolchildren, but inasmuch as adults are also frequent carriers I would urge the dividing of malarial districts under either federal or state control, or both, into areas small enough so that all inhabitants could be examined. To demonstrate the feasibility of this proposal would not be so stupendous a work as one might infer. Selected areas of high malarial morbidity with small populations should constitute the first point of attack in such a campaign. As the work proceeded it would suffice, in the larger areas with a low malarial morbidity, to confine the blood examinations to those giving histories of recent malarial infection.

B. THE FORMATION OF GAMETES IN THE CIRCULATION OF MAN

It is now generally held that gametes are the offspring of schizogony, that is, that after repeated cycles of the parasite in the human host, certain of the merozoites undergo a change and, instead of continuing the asexual cycle, become sexual forms, remaining such while contained within the human host, resuming the cycle as soon as transferred to mosquitoes capable of harboring the plasmodia. We have not at this time a clear understandng why some infections will produce large numbers of gametes, while others of equal severity produce few if any. We know, however, that, in general, protozoa having both a sexual and an asexual cycle will reproduce asexually so long as conditions are favorable for continued evolution, but as soon as conditions become unfavorable, the sexual cycle is assumed. It is probable that in certain persons resistance to plasmodia is low enough to allow continued reproduction by schizogony, and that, this being possible, gametes do not form.

Thomson[9] has shown that, in cases in which sexual forms do develop, there is a numerical relationship between the asexual and sexual forms, depending on the intensity and duration of the infection. Thus in eight very acute cases a total of 724,000 asexual parasites per cubic millimeter, produced a total of 1,354 sexual forms per cubic millimeter, or a ratio of 535 asexual parasites to one sexual form; in eleven subacute paroxysms a total of 318,700 asexual parasites per cubic millimeter, produced a total of 3,952 sexual forms per cubic millimeter, or a ratio of eighty-one asexual parasites to one sexual form; in twenty-six mild chronic cases a total of 172,360 asexual parasites per cubic millimeter, produced a total of 3,343 sexual forms per cubic millimeter, or a ratio of fifty-two asexual parasites to one sexual form. This elaborate work is of great value in demonstrating the significance of the formation of gametes and will be referred to again in discussing the significance of early diagnosis and rational treatment. Attention is here especially called to the fact that in the acute cases the sexual producing power is a tenth of that in the chronic cases, and considerably less than in even the subacute cases. Not only this, but the same investigations show further that only 37.5 per cent. of the acute cases developed any sexual forms, while 62.5 per cent. of the subacute cases later showed sexual forms and in the chronic cases this percentage was further increased to 69.25. It is clearly shown, therefore, that it is the recurring infections in which gametes are principally formed.

The length of time that elapses between the appearance of asexual and sexual parasites varies in the different types of infection and is no doubt further regulated by the action of the human host on the asexual parasites in regard to the amount of resistance offered this cycle. In the estivo-autumnal fevers

4. LePrince: Recent Progress in Antimalaria Work, With Special Reference to Anopheles Flight as Studied on the Isthmus of Panama, Tr. Fifteenth Internat. Cong. on Hygiene and Demography, v, Part 11, p. 544.
5. Fusco: La malaria nell infanzia, Policlinico, 1912, xix, No. 8, p. 261.
6. Ianni, G.: Latent Malaria, Policlinico, Rome, Dec. 4, 1910; abstr., THE JOURNAL A. M. A., Jan. 21, 1911, p. 231.
7. Craig: The Malarial Fevers, Haemoglobinuric Fever and the Blood Protozoa of Man, New York, 1909, p. 233.
8. Byrd: Cited by Henson: Malaria, Etiology, Pathology, Diagnosis, Prophylaxis and Treatment, St. Louis, 1913, p. 123.
9. Thomson: A Research into the Production, Life and Death of Crescents in Malignant Tertian Malaria, in Treated and Untreated Cases, by an Enumerative Method, Ann. Trop. Med. and Parasit., April, 1911, v, p. 62.

the average period required for the development of these forms is twelve days, in the quartan type nine days and in the benign tertian seven days.

The effect of quinin on the formation of gametes has been demonstrated by many observers. Since they evolve from schizonts as a result of the action of the human host on the merozoites, and since further, quinin kills all schizonts, it is plainly evident that, regardless of the unsettled question at this time of the action of this drug on the gametes themselves, with the destruction of the asexual cycle the gametes must become eradicated also.

C. THE TRANSFER OF THESE FORMS FROM ONE HOST TO THE OTHER AND THE EVOLUTION OF THE PARASITES IN MAN AND THE MOSQUITO[10]

Gametes, having once formed in the blood of man, will remain more or less constant in the peripheral circulation for an indefinite time so far as we know, the length of time necessarily depending on treatment instituted and possibly certain unknown factors. They will no doubt in some instances disappear spontaneously without treatment, occasionally not to recur but in nearly all instances reappearing when conditions become favorable. With our knowledge concerning latent carriers and the formation of gametes, it is evident that when, from a clinical point of view, a malarial subject may be rapidly improving it is just at this time he is the greatest source of danger, as a carrier, to the community in which he resides. While it may not be practicable to quarantine such persons, some effort should be made toward the enactment of legislation providing that malaria be included in the reportable diseases. There are, at present, other diseases included in the reportable group of a great deal less danger to the welfare of the public health than is malaria.

Inasmuch as heavy gamete-carriers are directly responsible for heavy infections, as shown by Christopher,[11] some effort should be made to detect them. The general opinion that a gamete-carrier has to remain one for a protracted period is erroneous, and there is absolutely nothing unpractical in advocating the screening of these carriers, so as to prevent them from infecting mosquitoes. As there is little, if any, danger of anopheles feeding during the daytime the patient may be free to go around as he pleases during the day hours, restrictions being placed on his movements only from sundown to sunrise. While in some instances possibly several weeks will be necessary completely to eradicate these forms from the circulation they can be generally, if not always, reduced to non-infective numbers in a very few days.

I wish to emphasize especially a most valuable auxiliary prophylactic unit present in the entire temperate zone but not applicable to the tropical zone. It is the fact that the evolution of the parasite within the mosquito cannot proceed when the mean temperature is less than 60 F. While it is true that many species of mosquitoes are capable of hibernation during our cold months, the sporozoites and other forms of the plasmodia undergoing evolution in the body of the mosquito die when the thermometer reaches this level. Drake[12] assumed that an average temperature of 60 F. is necessary for the continuation of the evolution of the parasite in the mosquito, and Jansco[13] has demonstrated the significant fact that in a temperature of 16 C. (60.8 F.), or lower, the organisms perish. Inasmuch as the thermometer reaches this level within the entire temperate zone during every winter season, it is self-evident that, with the departure of our winter season and the advent of warm weather, while many mosquitoes may be present, they have been rendered sterile by climatic conditions and are unable to infect man until they succeed in reaching and biting persons who harbor sexual forms of the plasmodia. In this way the mosquitoes become infected again, to remain so during the warm season and are again able to infect any persons on whom they feed. What Leslie[14] writes concerning popular opinion in the Punjab is applicable to all malarial districts:

> One frequently hears matters discussed as if the population were uninfected and remained so until the fever season came around, when any individual was more or less liable to catch infection. It is nearer the truth to say that we have a population already infected and that what happens in the fever season is the "hastening up" of this infection and its kindling into a flame.

A study of the morbidity rate of all malaria-infected foci will show the maximum malarial rate at the height, or toward the end, of the warm season. This is due, in my opinion, not only to the fact that the mosquitoes become more numerous, but that the other focus of infection, infected man, is also largely increased.

D. THE SIGNIFICANCE OF EARLY DIAGNOSIS AND THE RATIONAL TREATMENT OF ALL MALARIAL INFECTIONS

With the facts established that the sexual forms originate in the asexual cycle, that these forms do not make their appearance until after the asexual cycle has been active for several days and that proper treatment instituted early in the disease, in practically every instance, not only cures the disease but prevents even the formation of gametes, the responsibility of the physician in making an early diagnosis and instituting rational treatment is plainly evident.

While it is not within the scope of this paper to go into a general discussion on the treatment of the malarial infections, I do wish to emphasize the fact that in practically every instance quinin, if properly administered, will cure the disease. The work of Thomson, previously referred to, showing the numerical relationship between the asexual parasites and the later formed gametes demonstrates the value of, and necessity for, the prompt institution of the use of this drug. We have no drug that is as perfect a specific as quinin in malaria, and the fact that in a very few instances it fails should not be used as an argument against its great value.

A significant lesson may be obtained from a perusal of the studies of Ross and Thomson[15] of pseudorelapses in a series of their malarial cases. They cite many instances in which patients suffered apparent

10. Owing to lack of space, a description of the evolution of the parasite is omitted in this text. Those not familiar with it are referred to any text-book on the subject.

11. Christopher: Proc. of the Imperial Malarial Conf., Simla, India, p. 40.

12. Drake: Cited by Deaderick, A Practical Study of Malaria, p. 39, Philadelphia, 1909.

13. Jansco: Cited by Craig: The Malarial Fevers, Haemoglobinuric Fever and the Blood Protozoa of Man, New York, 1909, p. 109.

14. Leslie: Proc. of the Imperial Malarial Conf., Simla, India, p. 41.

15. Ross and Thomson: Pseudo-Relapses in Cases of Malarial Fever during Continuous Quinin Treatment, Ann. Trop. Med. and Parasit., December, 1911, p. 409.

relapse while under treatment with quinin, but a careful examination of the blood of these patients by thin and thick film methods failed to reveal any parasites, and a careful examination disclosed that other causes were responsible for the fever exacerbations. They found the most common causes for these pseudo-relapses were latent phthisis, valvular heart disease, Bright's disease, chorea, rheumatism and bronchitis. Vanderhoof[16] reports forty-seven cases of pyelitis, of which twenty-one had been improperly diagnosticated and treated for malaria. When, therefore, quinin does not cure malaria it might be well to question the diagnosis first, the specific action of the drug afterward. That there are exceptional instances in which a resistant form of the parasite is developed, is shown by Ross and Thomson[17] who report a case showing a true parasitic relapse while under vigorous and continued quinin treatment. I agree with Brem,[18] who writes:

> Chronic malaria and malaria cachexia are much-abused terms; they describe a condition and not a disease, and should be used only in elaboration of a diagnosis of malarial fever, for which proper cause should be shown.

There is little doubt in my mind that the convenient misapplication of these terms in cases in which the true condition is hard to ascertain, tends to discredit the most potent specific drug in our possession.

THE CULTIVATION OF TISSUE CELLS IN VITRO AND ITS PRACTICAL APPLICATION *

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In 1901, Leo Loeb[1] published an account of the cultivation of epithelial cells from the guinea-pig embryo. He embedded bits of epithelium in solidified blocks of agar or serum and then planted these in subcutaneous pockets of adult guinea-pigs, from which they were excised at stated intervals, embedded in celloidin and sectioned serially. He thus used the adult pig as a living incubator of constant temperature with a constant flow of fresh sterile nourishment. He found that epithelium can grow without the presence of connective or other tissue, but in the absence of connective tissue, epithelial growth seems to be self-limited with no development of normal formations.

The first reports of the cultivation of animal tissues outside of the body were those made by R. G. Harrison[2] in 1907 and again in 1910. He cultivated successfully bits of nervous tissue, using the excised medullary folds from early frog embryos in solidified lymph from the lymph-sacs of anesthetized adult frogs. This method was very difficult and only a limited amount of lymph was obtainable from one frog (5 or 6 drops).

In 1910, M. T. Burrows,[3] working in Harrison's laboratory, substituted frog's plasma for lymph, and later used chicken plasma with chick embryo tissues, and then various other plasma and tissues and serum agar. The methods of Harrison and Burrows have been adopted by Alexis Carrel for his work on continuous life of tissue *in vitro* and tissue preservation for surgical purposes. He and Burrows and others have changed and elaborated the technic from time to time, and it has probably not yet been standardized.

The plasma for these cultures may be kept liquid until used if the blood is collected in paraffined tubes, the red blood-cells centrifuged out, and stored in the ice-chest; or blood may be collected in sodium oxalate solution and the oxalate precipitated out quantitatively with calcium chlorid just before using, when the plasma will jelly quickly; or plasma may be replaced with serum agar. Carrel and Burrows found most vigorous growth in plasma rendered slightly hypotonic by dilution with sterile distilled water, or better, plasma diluted with embryonal juice. G. C. Weil, however, asserts that epithelial tissues grow best in serum agar. Various observers using these methods have obtained growths from most embryonal and many adult tissues of different species of animals, and from fragments of avian, mammalian and human tumors, but no one has yet reported successful cultivation of normal human tissues. Tissues will not grow when free in liquid mediums, and adult tissues grow only in plasma. Embryonal tissues, however, grow well in serum agar, and M. R. and W. H. Lewis obtained growth of embryonal tissues in Ringer's solution plus bouillon and even in sterile saline solutions. In the latter cases, however, the growth is very limited and dependent on the amount of stored nourishment in the cells rather than any nutrient properties of the salines. In using liquid mediums a silk veiling or threads must be used as support for the cells as they will not grow without.

To obtain uniformly successful growths of tissue cells *in vitro* great care must be exercised in the technic, as slight variations influence results very markedly. The plasma for this purpose may be autogenous (from the same animal as the tissue) for adult tissues, or homogenous (from an animal of the same species), or even heterogenous (from different species), or mixed for embryonal cultures. Chick embryo tissues will grow well in chicken, dog, rabbit or human plasma. I have worked only with adult and embryonal chicken tissues in chicken plasma and serum agar. I have obtained growth from chicken kidney, liver and heart (connective-tissue cells only from the last), and from embryonal heart, liver, spleen, kidney, brain, cord, eye, skin, lung and intestine. Fragments of embryonal intestine planted in plasma will continue peristaltic contractions for from twenty-four to forty-eight hours, and heart tissue I have known to pulsate as long as eleven days after planting, though I have never seen pulsation in new growth from heart cultures. Much of my work has been with heart tissue from embryos ranging from four to sixteen days old, the most satisfactory growths being from seven-day to eleven-day hearts. The younger heart tissues pulsate so violently that they

16. Vanderhoof: Douglas: The Pseudomalarial Types of Pyelitis, THE JOURNAL A. M. A., April 20, 1912, p. 1172.
17. Ross and Thomson: A Case of Malarial Fever, Showing a True Parasitic Relapse, during Vigorous and Continuous Quinin Treatment, Ann. Trop. Med. and Parasit., February, 1912, p. 539.
18. Brem, Walter V.: Studies of Malaria in Panama: 1. Clinical Studies of Malaria in the White Race, Arch. Int. Med., December, 1910, p. 646.

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1. Loeb, Leo: Arch. f. Entwcklngsmech. d. Organ., 1901, xiii, 487.
2. Harrison, R. G.: Proc. Soc. Exper. Biol. and Med., 1907, iv, 140; Jour. Exper. Zool., 1910, ix, 787.
3. Burrows, M. T.: Smithson. Rep., 1910, p. 573.

are apt to tear loose from their plasma supports and then contract permanently, and the older ones are slow to start pulsating, pulsate more sluggishly and make less growth.

The plasma I obtain by bleeding a young healthy chicken from the jugular vein through a glass cannula sterilized in olive oil, the first few drops of blood mixed with oil being discarded. The blood is collected in paraffin-lined glass tubes, chilled and kept chilled by immersion in ice-water, and as soon as possible centrifuged to remove the blood-cells. I have never succeeded in obtaining plasma entirely free from red cells, owing to fear of prolonged centrifuging heating the blood sufficiently to cause coagulation. After centrifuging, the clear straw-colored plasma is carefully drawn off with a fresh paraffin-lined pipet into fresh paraffined tubes and if not for immediate use is stored in the ice-chest. If kept at from 4 to 6 degrees C. chicken plasma may be kept liquid for over two months. I have used successfully plasma so stored for as long as twenty-three days, but found that it did not make so firm a jelly, and growth of tissue cells in it was not so vigorous or rapid as in fresh plasma. I usually obtain from four to six small centrifuge tubes of blood from a chicken, bleeding to death, and this yields about half as much clear plasma, which I store in small lots so as to avoid too frequent dipping into one tube.

The tissue for use in planting must be taken from a live or just killed animal, and must be kept from drying by handling and making all comminutions in Ringer's solution. Chick embryo tissues I obtain by flaming the egg and then cutting a circular window in the side over the germinal area, when the embryo can be lifted out with sterile forceps, the membranes severed, and the embryo dropped in a dish of Ringer's solution where the tissue desired can be dissected out. The tissue is then cut into minute fragments, a fraction of a millimeter in diameter, with a cataract or other sharp knife and a mounted needle, and transferred on the point of the knife to the surface where it is to be grown, along with a little saline solution to prevent drying.

The cultures may be of three kinds: first, hanging-block cover-glass preparations containing from one to six very minute fragments (0.25 mm. or less) mounted in one or two drops of plasma; second, larger cultures, several cubic centimeters in diameter, containing numerous somewhat larger fragments on the under-surface of glass plates used as covers to glass boxes containing a layer of sterile water to keep the cultures from drying; and third, similar boxes or Gabritschewski boxes arranged with a concave receptacle in the center to collect the fluid dropping from the cultures (extruded serum and digested plasma) and keep it free from dilution. These last are necessary only when one is studying antibody production or attempting to analyze the metabolic products resulting from the cultures. For large cultures some workers use Petri dishes, but I prefer glass boxes with ground rims, as they are more easily sealed. For the cover-glass preparations thick slides with deep, round, flat-bottomed cells (culture slides) are preferable to the ordinary hollow-ground slides. All cultures are sealed with petrolatum or soft paraffin to keep in moisture and keep out infection, though in cover-glass preparations molds will occasionally grow in through this.

The final comminutions of tissue should be made on the surface in which they are to be planted to avoid undue handling of the minute fragments. Tissues cut with a sharp knife will make better growth than those teased apart. The plasma, diluted to the desired point, is taken up with a fresh paraffined pipet and dropped on the tissue fragments, where it soon solidifies, leaving them embedded in a clear jelly. The cover-glasses or plates are inverted and sealed with soft paraffin at once and placed in the incubator, where they are kept at constant temperature; 39 C. is the optimum temperature for chick tissues. If the plasma is slow in solidifying it may be hastened by the addition of a drop or two of muscle or embryonal extract.

Cultures so prepared may be studied from time to time in the living condition under the microscope, a warm stage being used or preferably a warm box, in which the microscope is kept; the low power is used for the box cultures and low and high powers for the cover-glass preparations. For study of the cells and for permanent preparations they may be fixed by any of the usual methods. The cover-glass preparations may be stained and mounted as they are in balsam, and the box cultures, after fixing and hardening in alcohol, freed carefully from the glass and embedded in paraffin or celloidin and sectioned and then stained.

In these cultures the plasma has a twofold function, acting as a support and framework for cell growth, some support being absolutely essential, and also furnishing nourishment. The cells obtain their nitrogenous food by digestion of the plasma proteids to form amino-acids and possibly tryptophan.

Embryonal tissues start growth almost at once; I have seen undoubted growth in one case within an hour. Adult tissues have a latent period before growth begins of from twelve to twenty-four or more hours. Growth continues for from five to ten days or more (I have never seen it continue over eleven days), being limited by the amount of nourishment available and by the accumulation of waste products within and around the cells. Life in connective-tissue cultures may be prolonged indefinitely by washing cultures for a few minutes at room temperature in Ringer's solution and replanting in fresh plasma, but extreme care must be exercised to prevent bacterial contamination. For this work it is best to use a small square of silk veiling on the cover-glass as an added support for the tissues so that they will be less disturbed by handling. Carrel,[4] by this method, using two parts of chicken plasma with one part of eight-day embryo juice, has kept connective tissue from embryo heart alive and growing for over sixteen months, and Ebling[5] reports growth for over a year, replants being made every two or three days. Carrel[6] has also demonstrated that fresh tissues, if placed at once in deep tubes of petrolatum or Ringer's solution (sterile, of course) and sealed, may be kept in "latent life" in cold storage for some days or weeks, and if then planted in plasma and incubated they will become active and grow like fresh tissues.

4. Carrel, A.: Jour. Exper. Med., 1912, xv, 516.
5. Ebling: Jour. Exper. Med., 1913, xvii, 273.
6. Carrel, A.: The Preservation of Tissues and Its Applications in Surgery, THE JOURNAL A. M. A., Aug. 17, 1912, p. 523.

The new cells developing from these cultures are of two general types, the first to appear being elongated bipolar or multipolar spindle cells, the young undifferentiated connective-tissue cells, usually with elongated nuclei having their long axes parallel with the long axes of the cells, often in young cultures with two or more nuclei in each cell. These cells radiate in all directions from the original fragment, some forming rays of connected cells, some interlacing their processes to form a network and others free and unattached. The second type of cells appearing later are spherical or polygonal with spherical nuclei. These represent differentiated epithelium and vary in size and shape, depending on the type of epithelium from which they spring. Both types of cell when young have ameboid properties, as shown by their wandering out into the clear plasma. The fusiform cells may frequently be observed with phagocytized red blood-cells within them. Polymorphonuclear leukocytes, being themselves degeneration cells, do not multiply but do wander out away from the original tissue, but lymphocytes and myeloblasts do multiply by mitosis as shown by Awroroff and Timofeiewsky,[7] and amitotically as shown by Foot.[8] Both connective tissue and epithelial cells in young cultures show beautiful mitotic figures when properly fixed and stained. As the cultures age the growth becomes slower and the cells fill with granules and droplets of metabolic products of a fatty nature, as shown by osmic acid staining. The droplets increase in size and coalesce to form large drops seen as vacuoles in stained preparations, the cells draw in their processes and round out as though edematous, the cell wall and the nuclei finally disintegrate after cell death and there remains only a collection of masses of fat droplets.

In making these cultures various accidents must be guarded against in order to insure success. First, as I have said before, strict asepsis is absolutely essential in making cultures, in preparing tissue and in collecting and storing plasma. In collecting plasma, coagulation is prevented by using an oiled cannula, by thoroughness in paraffining tubes and pipets, by keeping the plasma cold by the use of ice-water, and by speed in collecting and centrifuging. This last is not so important with chicken plasma as with that of some mammalia. Rat and mouse plasma will jelly in half an hour; human and dog plasma will keep a few days, while chicken plasma, if stored in the cold, will remain fluid for over two months. In making the cultures themselves reasonable speed must be observed and it is best to work in rather a warm room or on a warm table to prevent chilling of the cells. Also drying must be avoided, and as soon as the plasma has solidified the cultures must be placed in the incubator and kept at a constant temperature and must not again be exposed to room temperature for any length of time. If cultures fail to grow one of the following reasons is responsible:

1. Bacterial infection.
2. Chilling of the tissue.
3. Drying of the tissue.
4. Searing of the tissue with too hot a knife.
5. Alterations in incubator temperature.

I have obtained growth and pulsation from chick embryo heart cultures placed in the incubator one hour after the egg was opened, but I usually try to work more rapidly than this.

Various factors influence the rate, duration and amount of growth, so care must be exercised in making comparisons between different cultures. For comparative studies of external influences it is best to use tissues from the same embryo or one of the same age, planted in the same lot of plasma with the same dilution. The factors influencing growth are:

1. Age of animal or embryo from which tissue is taken (growth being inversely proportional to age).
2. Age of plasma after bleeding (fresh plasma giving the best result).
3. Age of animal from which plasma was taken (again inversely proportional).
4. Time of exposure of tissue to room temperature.
5. Condition of animal from which plasma was taken.
6. Amount and nature of diluent used for plasma (the optimum dilution varying with tissue and animal).
7. Source of plasma, autogenous, homogenous, heterogenous or mixed (usually autogenous giving the best results for adult tissues and homogenous for embryonal).
8. Kind of tissue used (adult glandular tissue grows very slowly, while embryonal spleen may multiply forty-fold in twenty-seven hours).
9. Proportion of plasma to tissue.
10. Position of tissue in plasma (on lower surface, in depth or against glass).
11. Thickness of the layer of plasma as it affects proportion of plasma to tissue and position of tissue in plasma.
12. Temperature of incubation.
13. Thoroughness of sealing of cultures as it affects drying.
14. Amount and nature of bacterial or mold infection (molds usually not hindering growth and the influence of different bacteria varying greatly).
15. Number of washings and replantings of tissue. After several replantings the cells become accustomed to artificial life and grow more freely.

Peyton Rous[9] has demonstrated the production of acid by growth of adult tissues and uses litmus-tinted mediums to demonstrate growth, any fragments which do not grow remaining blue, while a pink color is a macroscopic indication of growth. Very young embryonal tissues, however, remain colorless. In actively growing cultures growth is seen by the naked eye as a halo around the original tissue.

Now that we have reviewed the history and methods of tissue cultivation *in vitro*, let us consider to what uses it has been and may be put.

Harrison[2] first used the method to study the origin and growth of nerve-fibers in the embryo, and Ingebrigtsen[10] and Burrows[11] have demonstrated degeneration and regeneration of nerve-fibers in cultures, the former obtaining growth of nerve-fibers from the cerebellum of young cats and guinea-pigs. Axis cylinders grow very rapidly, 1 to 1.5 microns per minute, but their growth is limited to from forty-eight to seventy-two hours.

Various other observers have studied and are studying phases of cell growth, multiplication and degen-

7. Awroroff and Timofeiewsky: Russk. Vrach, 1913, p. 549.
8. Foot: Jour. Exper. Med., 1913, xvii, 24.
9. Rous, Peyton: Growth of Tissue in Acid Media, Jour. Exper. Med., 1913, xviii, 183.
10. Ingebrigtsen: Jour. Exper. Med., 1913, xvii, 132; 1913, xviii, 412.
11. Burrows: Jour. Exper. Zool., 1911, x, 63.

eration, the cultures showing beautiful karyokinetic figures, and degeneration processes being well brought out by osmic acid fixation. Awroroff and Timofeiewsky[7] have recently published some interesting observations on leukemic blood, claiming the multiplication of white blood-cells, their transformation into fixed cells, giant cells and macrophages and the development of leukemic tumors from such cells retained from the blood-stream in various organs. They seem to prove the view that in wound-healing and tissue regeneration a portion of the white cells alter to form fixed cells. Foot[8] has studied hematogenesis in bone-marrow cultures from chick embryos. He finds the development of polymorphonuclear leukocytes from a mesenchymal lymphoid type of cell and rapid amitotic proliferation from unripe small types. He says that all cells of chicken-bone marrow can undergo a transformation to a type of cell resembling although not proved to be identical with the cells of connective tissue. Lambert and Hanes[12] and Weil[13] have produced foreign body giant cells in cultures at will by the introduction of irritants.

The action of various mediums on cell growth, especially of various saline substances, has been studied by Carrel and Burrows,[14] Ingebrigtsen,[15] M. R. and W. H. Lewis,[16] and Legendre,[17] and the effect of plasma of alien species on normal and tumor tissues by Carrel and Burrows,[18] and Lambert and Hanes.[19]

The action of various deleterious agents on growth may be studied in these cultures; such as the effect of heat and cold on the mediums and tissues, as studied by Ingebrigtsen[20] and Lambert,[21] and the action of ricin as studied by Levaditi and Mutermilch.[22] They added ricin to cultures of kidney and heart cells and found that it arrested multiplication of both, but had no influence on the pulsations of the latter. With splenic cultures it also prevented migration of the leukocytes. The same authors[23] added cobra venom to cultures of heart and spleen of embryo chicks and found that it prevented the formation of new fusiform connective-tissue cells and prevented migration of cells even when previously heated to 100 C. The absorption of the poison was very rapid, but if the exposure was not too long the effect could be counteracted by the further addition of anticobra serum. Previous addition of antiserum will prevent any deleterious action of the venom.

The effect of various gases, as oxygen, nitrogen, hydrogen, carbon dioxid and monoxid and methane, of chemicals in solution and of light rays, as Roentgen rays, radium and ultraviolet rays may be studied on these cultures. Levaditi and Mutermilch[24] have studied the action of ultraviolet light and find that an exposure of from twenty to thirty minutes will check connective-tissue growth and cell migration. I have planned in the future to consider the action of gases and of Roentgen rays myself if opportunity avails.

Interesting studies have been made on the subject of wound healing by E. S. Ruth,[25] using mass cultures of frog skin with windows cut in the center.

The growth and transmissibility of various tumors is being studied by several different workers. Rous[8] and Carrel and Burrows[26] have cultivated Rous chicken tumors due to a filterable agent, Carrel and Burrows,[27] and Albrecht and Joannovicz[28] have cultivated human malignant tumors in blood taken from the patient's arm vein at the time of operation, and Lambert and Hanes[29] have cultivated rat and mouse sarcoma and carcinoma. The last observers note that in carcinoma cultures there is often first a growth of connective tissue or sarcoma-like stroma cells. Doyen, Lytchowsky, Browne and Smyrnoff[30] are also studying tumor growth, but have not reported any different results from others.

From the study of *in vitro* cultures Carrel[6] developed his suggestion of the preservation of tissues in latent life in cold storage for surgical purposes.

Pfeiler and Lentz[31] mention casually in an article on another subject the fact that they have been studying the influence of various micro-organisms on tissue cultures with reference to chemotaxis, phagocytosis and nuclear changes, but do not give any account of their findings. My own work has been on the study of the action of the pathogenic bacteria and their products on tissue cultures *in vitro*, and I hope soon to publish some interesting observations on these lines. These cell cultures make excellent culture mediums for bacteria, as we have in them, as it were, living and actively growing mediums producing in nascent form the amino-acids now recognized as important bacterial foods. It is to supply these acids that Noguchi adds tissue fragments to his spirochete mediums and Rivas trypsinizes his egg medium for the rapid differentiation of cholera. I am in hopes that on these cultures we may be able to cultivate more of the strictly or nearly strictly parasitic micro-organisms that grow with difficulty or not at all on ordinary mediums. In these cultures we have an opportunity hitherto wanting of watching under the microscope the interaction of bacteria and tissue cells.

Carrel and Ingebrigtsen[32] have demonstrated the production of hemolysins in tissue cultures by adding washed goat red blood-cells to fresh cultures of guinea-pig bone-marrow and lymph-glands and, after four or five days, testing the digested mass with washed goat corpuscles. The development of hemolysins was preceded by phagocytosis of the original red cells in the culture. Herman Lüdke[33] has also demonstrated the production of agglutinins and hemolysins in these cultures, but he injects a live animal with the bacterial

12. Lambert and Hanes: Jour. Exper. Med., 1912, xv, 510.
13. Weil: Jour. Path. and Bacteriol., 1913, xviii, 1.
14. Carrel and Burrows: Jour. Exper. Med., 1913, xviii, 287.
15. Ingebrigtsen: Jour. Exper. Med., 1912, xvi, 421.
16. Lewis, M. R. and W. H.: Anat. Rec., 1912, v, 277.
17. Legendre: Compt. rend. Soc. de biol., 1913, lxxv, 246.
18. Carrel and Burrows: Jour. Exper. Med., 1911, xiii, 562.
19. Lambert and Hanes: Jour. Exper. Med., 1911, xiv, 129.
20. Ingebrigtsen: Jour. Exper. Med., 1912, xv, 397.
21. Lambert: Jour. Exper. Med., 1913, xviii, 406.
22. Levaditi and Mutermilch: Compt. rend. Soc. de biol., 1913, lxxiv, 611.
23. Levaditi and Mutermilch: Compt. rend. Soc. de biol., 1913, lxxiv, 1305; 1913, lxxiv, 1379.
24. Levaditi and Mutermilch: Compt. rend. Soc. de biol., 1913, lxxiv, 1180.
25. Ruth, E. S.: Jour. Exper. Med., 1911, xiii, 422; May, 1911, 599.
26. Carrel, Alexis, and Burrows, M. T.: Cultivation of Sarcoma Outside of Body (a Second Note), THE JOURNAL A. M. A., Oct. 29, 1910, p. 1554.
27. Carrel, A., and Burrows, M. T.: Human Sarcoma Cultivated Outside of the Body (a Third Note), THE JOURNAL A. M. A., Nov. 12, 1910, p. 1732.
28. Albrecht and Joannovicz: Wien. klin. Wchnschr., 1913, No. 20, p. 781.
29. Lambert, R. A., and Hanes, Frederic M.: Growth in Vitro of the Transplantable Sarcomas of Rats and Mice, THE JOURNAL A. M. A., Jan. 7, 1911, p. 33; Jour. Exper. Med., 1911, xiii, 495; Columbia Univ. Press, 1912, ii, 161.
30. Browne and Smyrnoff: Compt. rend. Soc. de biol., 1913, T. 74, 1331.
31. Pfeiler and Lentz: Centralbl. f. Bakteriol., 1913, i, 68, 122.
32. Carrel, A., and Ingebrigtsen: Jour. Exper. Med., January, 1912, xv, 287.
33. Lüdke, Herman: Berl. klin. Wchnschr., 1912, xlix, 22, 1034.

culture or red cells and kills the animal in twenty-four hours, when tests show no antibodies have yet been formed, and makes cultures of tissue from the freshly killed animal in homogenous serum and incubates for from two to five days. Then on testing the serum the antibodies are found to have developed *in vitro* in the extirpated cells. He also obtains results with the use of Ringer's solution in place of serum, so this shows that growth is not essential for antibody formation. Hadda and Rosenthal[34] have also been studying the action of normally present hemolysins in serums. Lambert[35] has demonstrated the formation of cytotoxins for mouse sarcoma cells in the blood of rats immunized with such sarcoma. H. Reiter,[36] using Carrel and Ingebrigtsen's methods, has demonstrated that kidney cells as well as cells of the hemopoietic organs can produce agglutinins, and Przygode[37] has repeated the work of Carrel and Ingebrigtsen and of Lüdke on immune body production.

V. H. Moon[38] has cultivated the virus of rabies in test-tubes. He used the brain of a dog injected with street virus and killed in from twelve to eighteen days on the appearance of the first symptoms. At this time no Negri bodies or only very minute ones were found, but if the tissue is placed in sterile dog serum and covered with olive oil to exclude oxygen and incubated, and one tube examined every twenty-four hours, the Negri bodies will be seen to develop and increase in size and number. He obtains the same results in Ringer's solution and finds continued virulence and presence of Negri bodies in fifth and sixth subcultures.

Steinhardt, Israeli and Lambert,[39] in a joint article, report the cultivation of the virus of vaccinia by similar methods from stock glycerinated, phenolated, calf virus dialyzed through collodion sacs. Small pieces of rabbit or guinea-pig cornea are placed for a few minutes in this solution and then planted in homogenous plasma. No vaccine bodies are seen, but virus from these cultures is proved active by skin inoculations and successful inoculations have been made from third transfer cultures.

I have purposely refrained from giving any details of my own problems or results, as they will appear in another form in the not distant future.

34. Hadda and Rosenthal: Ztschr. f. Immunitätsforsch. u. exper. Therap., 1913, Orig. 16, 524.
35. Lambert: Jour. Exper. Med., 1911, xiii, 453.
36. Reiter, H.: Ztschr. f. Immunitätsforsch. u. exper. Therap., 1913, Orig. 18, 5.
37. Przygode: Wien. klin. Wchnschr., 1913, No. 21, p. 84.
38. Moon, V. H.: Jour. Infect. Dis., 1913, xiii, 232.
39. Steinhardt, Israeli and Lambert: Jour. Infect. Dis., 1913, xiii, 294.

Constitutionality of Illinois Child Labor Law Affirmed.—The United States Supreme Court holds that the Illinois child labor law is valid. The decision refers particularly to Section 11, which prohibits the employment of children under 16 in various hazardous occupations. It is said that it was clearly within the power of the legislature to secure the safety of the young by imposing absolute requirements of the kind mentioned in the act. The decision in substance states that a minor employed contrary to the provisions of the child labor law if injured in such employment has a right of action and may recover damages even if an employer in hiring him acted in good faith and relied on the representations of the minor that he was over 16. In the case on which the decision is based, the boy presented an affidavit as to his age and the company failed to investigate the correctness of the statement that he was over 16. The statute of 1913 places the responsibility as to the correct age of a minor on an employer.

BENZOL IN THE TREATMENT OF POLYCYTHEMIA RUBRA

WITH REPORT OF A CASE

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The use of benzol (benzene, C_6H_6), as a medicinal agent was suggested by the observations of Selling,[1] who studied its influence in the anemia of certain factory-girls whose occupation led to the inhalation of benzol gas. His subsequent experimental work on animals showed that benzol caused, first, a marked reduction in the white blood-cells, and later a diminution in the red blood-cells. Examination of the tissues of animals thus poisoned indicated a selective action on the bone-marrow.

Von Korányi[2] was the first to make practical use of those observations. Stimulated by Selling's work, he administered benzol to a patient with splenomyelogenous leukemia and produced a remarkable fall in the leukocyte-count as well as reduction in the size of the spleen and improvement in the patient's general condition. He recommends its use in leukemia and also suggested that it might be of value in polycythemia. Numerous other observers have subsequently attested the value of this drug in leukemia. A recent article by Barker[3] gives a summary of the literature together with the report of a case. In the literature of polycythemia, however, I can find only the following instances of benzol administration:

Korányi[2] observed the red blood-cells to fall from 9,000,000 to 6,700,000 after three weeks' benzol therapy.

Moewes'[4] case was one of long standing. The patient had exhibited a somewhat cyanotic appearance for about twenty years. Twenty-three years previously he acquired syphilis. At one time he was in Senator's clinic with nephritis, at which time he had an enlarged spleen, and 11,000,000 red blood-cells. He there underwent numerous "cures" for polycythemia, including repeated venesection and the administration of both mercury and tuberculin, all to little avail. Salvarsan later produced slight but temporary improvement. Moewes began the administration of benzol when the red cells were 9,500,000. Under the influence of this drug these cells fell in six weeks to 6,500,000, and the patient also showed improvement in his general condition. The dosage is not stated. For six months the blood remained apparently unchanged, when, without obvious cause, the patient developed acute nephritis and died of uremia. At necropsy the tissue changes produced by the nephritis and the old syphilis predominated and prevented any satisfactory study of the polycythemia. Moewes speculates on the possible rôle of benzol in producing the nephritis; I shall refer to this later.

Beltz[5] reported a case of polycythemia at a recent meeting of the Allgemeiner Aertzlicher Verein zu Köln, in which the administration of "300 capsules, each 0.5 gm. of benzol" has produced as yet no influence on the disease.

Kiralify[6] reports two cases of polycythemia, neither with enlarged spleen, treated with benzol. In the

1. Selling: Johns Hopkins Hosp. Bull., 1910, xxi, 33.
2. Von Korányi: Berl. klin. Wchnschr., 1912, xlix, 1357.
3. Barker: Johns Hopkins Hosp. Bull., 1913, xxiv, 363.
4. Moewes: Deutsch. Arch. f. klin. Med., 1913, cxi, 281.
5. Beltz: München. med. Wchnschr., 1913, lx, 161.
6. Kiralify: Virchows Arch. f. Path. Anat., 1913, ccxiii, 399.

first case, after several months' administration of the drug, up to 5 gm. daily, the red cells were seen to fall from 8,700,000 to 4,800,000, and coincident improvement in all symptoms was noted. During five weeks without benzol the red cells increased to 5,170,000. The second patient was benefited in a similar manner, the red cells falling from 6,500,000 to 4,960,000 and remaining at the latter figure. In this case the drug was given by enema as it could not be retained by the stomach.

Diet, Roentgen ray exposures of the spleen and long bones, and repeated venesection are the other methods of treatment usually recommended in polycythemia. Reports do not indicate that any of these methods have produced satisfactory results.

I wish to report the case of a patient who showed complete amelioration of all symptoms following the administration of benzol, which improvement continues to hold good after three months without benzol.

The patient, W. D., is 50 years of age, a wine merchant, and has always been temperate in the use of alcohol. The family history is unimportant, and he has never been ill. Syphilis is denied and the Wassermann test is negative. For several years (five or six probably) it has been noted that his complexion was florid and that his lips had somewhat of a bluish tint. He first consulted a physician early in 1911 when he was under rather severe mental strain and had reason for anxiety concerning his business. At that time he complained of "nervousness," headaches, pain in the left hypochondrium, itching of the entire body, which at times was very distressing, and blurring of vision. He states that albumin and casts were at that time found in the urine. All symptoms gradually increased in severity.

I first saw the patient two years later, in March, 1913. The skin was of a "dusky" color and the mucous membrane "bluish-red." The tongue looked somewhat like a piece of raw beef, yet was of a violet tint. The veins of the face were dilated and tortuous. At the apex of the left lung a few fine râles could be heard. The heart was apparently normal, as were the peripheral arteries. Systolic blood-pressure was 140 mm. The spleen could be palpated on inspiration and was a little tender. The size of the liver was apparently normal. The deep and superficial reflexes were preserved. There was no elevation of body temperature. The skin appeared dry. There was no unusual enlargement of the lymph-nodes.

The eyes were examined by Dr. K. W. Constantine, who reported: "The color of the fundus-reflex is darker than usual. . . . The red color of the retinal vessels is denser than normal. . . . There are no hemorrhages or signs of inflammation."

The urine, normal in amount, specific gravity 1.020, contained an abundance of albumin, hyaline and granular casts, and great numbers of red blood-cells. The phenolsulphonephthalein test of kidney function gave normal values.

The red blood-cells were 8,300,000, and the leukocytes, 26,000. The differential count made with Wright's stain is given in Table 1.

TABLE 1.—DIFFERENTIAL COUNT MADE WITH WRIGHT'S STAIN

	Cells Counted	Percentages
Polymorphonuclear neutrophils	471	94
Polymorphonuclear eosinophils	10	2
Polymorphonuclear basophils	0	0
Small mononuclears	12	2.5
Large mononuclears	7	1.5
Myelocytes	0	0
	500	

Nothing widely at variance from the normal could be seen in the character of the red cells. Slight variations in size and in tinctorial characters were seen. Occasionally mild polychromatophilia and very rarely a nucleated cell appeared. One megaloblast was found. Beyond great increase in the number of the white cells, at the expense of the polymorphonuclears, these cells presented nothing unusual.

The hemoglobin, estimated by means of 10-c.c. volumetric flasks and the Autentrieth-Königsberger colorimeter, was 185 per cent.

During the following three months, with no treatment beyond diet and hygienic measures, the red cells increased, as shown in Table 2, to 12,700,000, and the leukocytes to 29,000 (June 10, 1913). Slight downward fluctuation followed, and July 21, with the red blood-cells 10,500,000, benzol was begun.

Ascending doses, beginning with 1 gm. three times daily and finally reaching 4 gm. three times daily, of an emulsion containing 25 per cent. benzol, 25 per cent. olive-oil and 50 per cent. mucilage of acacia, were given. Thus, the maximum dose of benzol was 4 gm. per day. A gradual fall in the number of red cells as well as in the number of the leukocytes was noted. After five months (Dec. 13, 1913) the red cells numbered 6,600,000, the whites 10,000. Within the next four weeks the red cells dropped to 5,000,000. Thinking this perhaps an error, I requested the patient to return for another count. On his return three days later the red cells were 4,300,000. The benzol was immediately discontinued. Within the next four weeks the red cells rose to 6,000,000. In the four weeks following they fell to 5,000,000, and for the next seven weeks (February 17-April 8) the red cells have remained stationary.

TABLE 2.—BLOOD-COUNTS, MARCH 24, 1913-APRIL 8, 1914

Date	Reds	Whites	Hemoglobin
3/24/13	8,300,000	26,000	180
4/ 9/13	9,000,000	24,000	185
4/14/13	9,000,000	22,400	...
5/ 5/13	9,200,000	.....	...
5/17/13	9,900,000	.....	185
5/27/13	11,300,000	29,200	...
6/10/13	12,700,000	27,300	...
6/27/13	9,600,000	28,000	...
7/22/13	Benzol begun	.....	...
7/22/13	10,500,000	22,500	...
7/31/13	9,900,000	21,000	...
8/ 7/13	9,800,000	.....	...
8/15/13	9,200,000	.....	...
8/23/13	9,600,000	.....	...
9/13/13	8,800,000	.....	...
9/29/13	8,300,000	15,700	...
10/27/13	7,500,000	17,000	...
11/ 8/13	7,400,000	15,000	...
11/28/13	6,900,000	11,000	...
12/13/13	6,600,000	10,000	110
1/10/13	5,000,000	7,100	...
1/13/14	4,300,000	.....	...
1/13/14	Benzol discontinued	.....	...
1/24/14	4,500,000	10,000	...
2/ 3/14	6,000,000	8,800	100
2/ 5/14	6,000,000	.....	105
2/17/14	5,000,000	8,700	...
3/10/14	5,000,000	9,500	100
3/23/14	5,000,000	12,300	100
4/ 8/14	4,800,000	10,500	95

Table 3 gives the last differential count made March 10, 1914. This and the differential count above noted represent the extremes in percentages. Counts made on intervening dates show corresponding figures (Wright's stain).

TABLE 3.—LAST DIFFERENTIAL COUNT

	Cells Counted	Percentages
Polymorphonuclear neutrophils	425	85
Polymorphonuclear eosinophils	13	2.6
Polymorphonuclear basophils	4	0.8
Small mononuclears	35	7
Large mononuclears	23	4.6
Myelocytes	0	0
	500	

The changes in the urine are noteworthy. The casts and red blood-cells have gradually disappeared, and, though a trace of albumin is now present, it also at one time disappeared. Evidently Moewes' suspicions as to the irritating effect of benzol on the kidney are not confirmed by this case.

During the period of improvement in the blood-picture the patient has shown equal improvement from every other aspect. His appearance is now that of a normal man. The itching, the disturbance of vision and the headaches have completely disappeared. The pain in the left hypochondrium and the pain under the left scapula, of which he frequently com-

plained, no longer disturb him. The spleen cannot be palpated. The suggestive râles formerly heard at the apex of the left lung can no longer be detected. The patient's general sense of well-being is marked. He states that he feels better than he has felt in years.

Benzol in this instance caused occasional disagreeable gaseous eructations but no other disturbance of the stomach.

Since there was a slight fall in the number of the red cells just before benzol was begun, it might be surmised that the subsequent fall to normal was due to natural causes rather than to the drug. On the other hand, such small fluctuations in the red cells are frequently seen in polycythemia, while no case reported has without benzol shown the steady and complete decrease to normal which immediately accompanied the administration of this substance.

The experimental and clinical experiences of the observers above quoted, together with the improvement in this case, justifies, I think the conclusion that benzol is a valuable therapeutic agent in polycythemia.

At the same time, this patient must not be regarded as cured. No doubt we shall see another increase in the red cells, when recourse must again be had to benzol. The ultimate result is as yet a matter of conjecture.

For the suggestion that benzol be used I am very grateful to Dr. W. S. Thayer, who saw the patient a short time before he came under my care.

EXTRAPERITONEAL CESAREAN SECTION

WITH REPORT OF A CASE

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The management of contracted pelvis and cesarean section has not yet reached so high a degree of perfection as to leave no room for further improvement. I therefore recommend for the treatment of dystocia in contracted pelves an operation which is rarely performed in America, but rather frequently abroad, and which I deem an improvement on the classical cesarean section.

REPORT OF CASE

Mrs. J. G., age 21, primipara, was admitted to the Sydenham Hospital Jan. 11, 1914, at 6:30 a. m. The patient, a short slender woman, stated that she had been having labor pains every ten minutes for the preceding six and one-half hours and that the membranes had ruptured just prior to her admission. No history was given of rickets or other diseases bearing on the case.

Examination.—Pelvis generally contracted. Measurements: interspinous, 19.5 cm.; intercristal, 26; intertrochanteric, 31; conjugate diagonal, 10 minus; conjugata vera, 8¼. Double promontory, moderately projecting. Internal os, obliterated; external os admitted one finger; head of child above the brim; back to the right; small parts to the left. Liquor amnii dribbling away. Labor pains continued but descent into the pelvis did not take place.

January 13, at 11:45 a. m., patient received pituitary extract, 5 minims, hypodermatically. Pains became strong; half an hour later came a gush of liquor amnii. The last examination made at 2 p. m. showed the external os four fingers breadth dilated, membranes ruptured; head well fixed with large diameter in the pelvic inlet. At 4 p. m., thinning of the lower uterine segment having occurred and the fetal heart-sounds being good, extraperitoneal casarean section was decided on. Patient had been in labor sixty-three hours. Preliminary filling of the bladder, having been unsuccessful, was dispensed with.

Operation.—A median incision was made 2 cm. above the symphysis and extending upward 12 cm.; the fascia was incised; the recti muscles and prevascular connective tissue were separated; the bladder also separated from the lower uterine segment on the left side; an incision was made through the ligamentum umbilicale sinistrum, with separation both of the peritoneal fold from the bladder as far as the urachus, sharp and blunt, and of the peritoneal fold from the lower uterine segment on the left; the bladder was retracted to the right. A plexus of large veins was exposed without injury or bleeding. Median incision was made of the lower uterine segment, from 10 to 12 cm. (3 or 4 inches) long; right ear presented; finger was put into mouth and face rotated anteriorly; forceps applied bilaterally; head extracted by flexion with ease, body followed. Child cried. Placenta was removed manually; uterus well contracted; bleeding minimal. Cervical incision was closed by running catgut suture, taking in the entire thickness of the cervix, and covered by a second layer of interrupted suture. The bladder was replaced and fixed above to the peritoneal fold and at the left to the pelvic connective tissue. Drain was inserted; abdominal wound closed in three layers. At the time the uterus was incised, patient received pituitary extract, 1c.c. and ergot 1 c.c.

Postoperative History.—The condition of the patient, the next day, was very good. Although it was necessary to catheterize her several times during labor, she now was able to urinate spontaneously in spite of the great separation of the bladder. The patient complained of hunger. The drain was shortened daily and removed entirely on the fifth day. The patient was out of bed on the seventh day. Except for a bronchitis contracted on the fifth day, the patient was well. Examination made February 17 showed no general or local disturbance.

Two questions possibly may be asked: A. Why did I wait over two days before operating? B. What are the advantages of the extraperitoneal section over the classical operation?

A. In patients with contracted pelves with a conjugata vera measurement of 8¼ cm. from 65 to 70 per cent. of cases of labor terminate spontaneously, and we cannot with tape and pelvimeter determine beforehand what the outcome of such cases will be. In primiparas in particular the indications to operate must be exceptionally clear. Nothing but a fair trial for natural labor and careful observation on the part of the attendant during that time can determine whether labor will not terminate without operation.

B. The advantages of the extraperitoneal cesarean section are: (1) lessened bleeding; (2) non-exposure of peritoneum; (3) lessened danger of postoperative hernia, and (4) most important of all, the fact that the operation can be performed at a time when it would no longer be safe to do the classical operation.

1. *Lessened Bleeding.*—In cervical cesarean there is very little bleeding; first, because the lower uterine segment is distended and thinned out, the muscle often being of the thinness of paper; secondly, because no large sinuses are located there; thirdly, because the placenta is not encountered.

2. *Non-Exposure of Peritoneum.*—The peritoneum remains sealed to infection. No blood or questionable liquor amnii can enter the peritoneal cavity. The intestines do not come into the field of operation. There is no cooling or lesion of the abdominal contents. The operative shock is reduced to a minimum.

3. *Exclusion of Postoperative Hernia.*—In spite of the fact that the wound is drained, there is no tendency to postoperative hernia; first, because the abdom-

inal wound can be sutured in layers except at the lower angle, and second, the part drained is outside of the abdominal cavity in the space of Retzius.

4. *Time of Operation.*—The operation can be performed when it would no longer be safe to do the classical operation. In fact, it is generally performed after the woman has been in labor a considerable time, long after the membranes have ruptured and after repeated vaginal examinations by physicians and midwives.

TECHNIC OF OPERATION

The technic followed by me and recommended in this paper is the combined Latzko-Sellheim method. It is based on a study of about fifty cases at the Wertheim clinic in Vienna.

The underlying principle is the separation of the bladder to one side (Latzko), and the separation of the plica upward (Sellheim). This gives the surgeon sufficient room to extract the child, and at the same time obviates extensive separation of the bladder or peritoneum from the lower uterine segment. It is thus possible to avoid subsequent paralysis or gangrene of the bladder, and injury to the peritoneum at the time of the operation. Further, if the operator adheres to the rule not to separate the peritoneum from the bladder beyond the urachus where it is firmly attached, injury to the bladder or peritoneum can be avoided without difficulty. This is a vital point in the operation, for if either the bladder or peritoneum is opened, the operation fails to be a true extraperitoneal operation.

The bladder may be separated from the lower uterine segment on the left or right side. I prefer the left side, first, because in pregnancy the bladder inclines more to the right, and, secondly, because as a rule the lower uterine segment is more distended on the left side. If, however, the presenting part is on the right side causing marked distention there, I separate on that side.

The ureters and large blood-vessels do not come within the field of operation. Caution must be observed, however, not to dissect too far laterally, lest large venous plexuses be encountered, resulting in severe and troublesome bleeding, or the iliac blood-vessels may even be exposed.

Time for Operating.—The operation can be done at any stage of labor, but is best done when there is distention of the lower uterine segment. The longer one can wait without causing a rupture of the uterus, the higher will the reduplication of the plica be carried up and the easier will be the operation.

Position of the Patient.—It is advantageous to place the patient in the Trendelenburg position before extracting the child. This aids by causing the fetal head to recede. As soon as the child is extracted, the patient should be changed to horizontal or median Fowler. The blood and amniotic fluid will thus drain through the vagina, and any bleeding from the uterus is noticed at once.

The Bladder.—I do not concern myself much about the bladder contents. At the Wertheim clinic operations were performed with filled, half-filled and empty bladder, but I prefer a moderately (from 100 to 150 c.c.) filled bladder, or a well-filled bladder (from 200 to 300 c.c.) with a self-retention catheter which enables me to empty the bladder contents at will. I always found room enough, but it is certain that an overfilled bladder obstructs the field of operation, while an empty bladder renders the finding of the bladder boundary and its dissection more difficult. The filling of the bladder has the further advantage of lifting still higher the plica vesico-uterina.

Abdominal Incision.—I prefer a median incision just above the symphysis, from 12 to 14 cm. in length. A Pfannenstiel incision is not advisable; first, because it may be necessary to drain from above; secondly, because a second cesarean section on the same patient may sometime be necessary. Besides, the danger of hernia with median incision after an extraperitoneal cesarean is negligible.

Delivery of the Child.—In vertex presentation the fetus may be expressed, with the aid of a finger placed in the mouth and traction applied on the upper jaw. I prefer extraction by the application of forceps to the head. If a Latzko forceps is at hand, I permit the vertex to remain in the wound and extract by extension. Otherwise, a finger is hooked into the mouth, the face is rotated into the incision, ordinary forceps are applied bilaterally and the fetus extracted by flexion. The rest of the body follows with ease.

Drainage.—If the wound is perfectly dry and the case is not too suspicious, drainage may be dispensed with. When there is any doubt, the wound should be drained. This can be done either from above, through the abdominal wound or below through the vagina. The uterine cavity is not drained.

Sutures.—Sutures may be interrupted or continuous, of silk or catgut. In nearly all cases at the clinic interrupted silk sutures were used. I take in the entire thickness of the lower uterine segment at once, and cover this by a second layer of sutures. I think it advisable not only to replace the bladder, but also to secure it laterally as well as above with catgut sutures. The abdominal wall is closed in three layers.

Time Consumed and Difficulty of Procedure.—The extraperitoneal cesarean section is more difficult and more time-consuming than the classical operation; but success does not depend so much on the rapidity as on the exactness with which an operation is performed. Neither mother nor child suffers through the longer time consumed. In fact, one who has observed post-operative cases of classical cesarean section with the patients often suffering intensely and nearly always in discomfort, is struck by the well-being of patients who have undergone the extraperitoneal cesarean section.

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Blindness in Cebu.—L. Schwartz of the Public Health Service (*Pub. Health Rep.*, March 27, 1914) investigated the question of blindness in Cebu, Philippine Islands. In the twenty-three towns visited, with a population of 451,751, or a little more than half the population of the province, there are about 322 cases of blindness, and in the whole island about 600, of whom perhaps 200 might be made to see and become self-supporting. Of 145 cases examined by him, 50 were found to be suitable for surgical treatment with almost certain restoration of vision. They included cataracts with good light perception and pupil reaction, leukomas the result of keratitis, ophthalmia, pterygiums covering the pupil, cases of old iritis with occlusion of the pupil but with light perception, etc. The chief cause of blindness was found to be small-pox, 48 of the 145 cases found being due to this cause. Since the Americans have begun systematic and compulsory vaccination, small-pox is no longer a cause of blindness. There were 18 cases due to cataract, and 17 due to trachoma, which latter disease is the cause of about 18 per cent. of the blindness in Cebu. About 15 per cent. of the cases were due to causes not preventable, such as traumatism, etc.

A COMPARISON OF THE ONSET AND CHARACTER OF THE APOPLEXY CAUSED BY CEREBRAL HEMORRHAGE AND BY VASCULAR OCCLUSION*

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INTRODUCTION

The differentiation during life between spontaneous intracerebral hemorrhage and cerebral softening consequent on vascular occlusion is notoriously uncertain. Nevertheless, it is generally admitted, whether correctly or incorrectly, that the mode of onset and character of the apoplectic attack may be sufficient to determine the nature of the underlying lesion.

Thrombosis, like hemorrhage, is dependent on arteriosclerosis or syphilitic arteritis, though some cases of vascular occlusion can be ascribed to certain changes in the blood, as in pneumonia and typhoid fever. Without trauma healthy blood-vessels never rupture. This may account for the rarity of cerebral apoplexy in the lower animals. Dr. Herbert Fox, director of the pathologic laboratory at the Philadelphia Zoological Gardens, has informed me that he has never observed arteriosclerosis of the brain or its results—softening or hemorrhage—in a series of more than twenty-three hundred post-mortem examinations of a large variety of mammals, birds and reptiles.

Disturbance of consciousness is the most characteristic feature of apoplexy. Gowers[1] considered a patient to be unconscious or to have lost consciousness when there was no longer spontaneous evidence of mental action and none could be elicited by sensory stimulation. The exact mechanism concerned in producing this condition is not clearly understood; it is reasonably certain, however, that the preservation of consciousness depends on the proper regulation of intracranial pressure with an adequate supply of blood to the cerebral cortex.

It is believed that the intracerebral pressure may vary slightly under normal conditions, but according to Geigel[2] it must at all times equal the difference between the arterial pressure and the vascular tension, when the arterial pressure remains the same. An increase of vascular tension leads to diminution, and a cessation of vascular tension to increase of intracerebral tension. It is not the quantity of blood constantly present in the cranial cavity, but the quantity propelled in a given unit of time through the vessels of the brain, which determines the nutrition and proper function of the living cerebral substance. When intracerebral pressure increases, the veins and capillaries having very thin walls are necessarily compressed, thus a deficiency in the circulation of the brain is produced. Hence, even a decrease of arterial tension while the arterial pressure remains the same represents a causative factor in the production of the attack.

Anything which brings about a disturbance between the normal relationship of intracerebral pressure, arterial pressure and vascular tension, may cause an apoplectic attack; moreover, it is probable that the character of the attack can be directly influenced not only by the degree of disturbance, but also by the rapidity with which the normal neutralization of these forces is disarranged. Obviously, both hemorrhage and thrombosis can produce such disharmony in relationship and regulation of the forces concerned, although perhaps not in exactly the same manner; still the end-results may be similar.

Thomas,[3] in his article on apoplexy in Osler's "System" quotes von Monakow, who gives the following analysis of the various effects of hemorrhage into the brain: (1) the primary local destruction of the nervous tissue; (2) the edema in its neighborhood; (3) the decrease in the amount of blood in the vessels in the neighborhood of the clot; (4) the accompanying circulatory changes in the cortex; (5) the transmission of the mechanical shock caused by the sudden escape of blood into the brain in all directions throughout the intracranial cavity (this shock besides its physical action, is a physiologic stimulus to various parts of the brain; and especially, von Monakow thinks, it may stimulate the vasomotor centers and cause a reflex contraction of the cortical vessels); (6) increase in intracranial pressure; (7) interference with the circulation of the cerebrospinal fluid. Disturbance of consciousness, he believes, depends on a sudden cerebral anemia, and that this is brought about by some or all of the various factors enumerated above, but that probably the mechanical stimulation of the vasomotor centers is the most important.

All explanations of the real mechanical changes which do take place within the brain at the time of the initial onset of an apoplectic attack must be somewhat imperfect; still a proper theoretical conception of the various principles concerned is of great assistance in understanding the character of the clinical manifestations of the different conditions under discussion.

In order to ascertain to what extent differences in the character of an attack can be relied on for diagnostic purposes, seventy-two cases of cerebral hemorrhage and fifty of softening have been studied. In each case a post-mortem examination of the brain was made. In addition, the histories of more than three hundred non-fatal cases of hemiplegia were examined, in which an acute vascular lesion had undoubtedly been the initial source of paralysis, but only one hundred of these were found satisfactory for analysis. On account of the fact that so many patients suffering with apoplexy are not observed during the beginning of the attack, many being picked up on the street and brought to the hospital in an unconscious state, the difficulty of obtaining an accurate history is very great; therefore, a large number of cases had to be discarded, and only thirty-eight cases of hemorrhage and twenty-four of softening were made use of, for the accuracy of the statements obtained seemed to be beyond all possible doubt.

In order to facilitate comparisons, cases of hemorrhage and softening have been grouped according to the rapidity with which consciousness was lost.

GROUP A, IN WHICH CONSCIOUSNESS WAS LOST SUDDENLY

This group comprises twenty-four cases of hemorrhage and eleven of softening, each of which began

* From the Laboratory of Neuropathology at the University of Pennsylvania, Department of Medicine.

1. Gowers: Text-Book, Diseases of the Nervous System, 1907, ii, 99.
2. Geigel: Text-Book, Modern Clinical Medicine, Diseases of the Nervous System, 1908, p. 259.
3. Thomas: Osler's Modern Medicine, vii, p. 382.

with sudden profound loss of consciousness. These patients were variously occupied pursuing their daily vocations, and were instantaneously struck down totally oblivious of their surroundings. Premonitory symptoms were not recorded. Vomiting occurred early in two cases of hemorrhage, but was absent in each of eleven cases of softening. Violent general convulsions were observed in three cases of hemorrhage and in three of softening. In two of the former cases blood had filled both lateral ventricles, and the convulsions were not only severe, but rapidly repeated until death occurred. In one case of hemorrhage, severe but infrequent convulsions were noted, and the lateral ventricles were not filled with blood; in seven cases the lateral ventricles were filled with blood, yet convulsions did not occur. In two of the cases of softening in which convulsions took place, the basal ganglia alone were affected; but in another case of softening the lesion was confined to the cortex, yet the patient had violent bilateral general convulsions. In every case of this group, whether with hemorrhage or vascular occlusion, the loss of consciousness was equally profound, and except for momentary remissions it was not regained. Hemiplegia was invariably present. In twenty-three of the twenty-five cases the hemorrhage was situated in the region of the basal ganglia and internal capsule, and in nine the lateral ventricles were filled with blood. Only one hemorrhage was small, measuring 5 by 2.5 cm. This was situated directly under the cortex of the right temporal lobe. Each one of the softenings belonging to this group were found in the region of the basal ganglia and internal capsule. Nine were extensive, while only two were small, measuring from 3 to 4 cm. in diameter. In each case thrombosis has been the cause.

The duration of life varied considerably. Only four patients with hemorrhage lived less than one day, one died in six hours, and one survived twenty-one days; but in this latter case the hemorrhage was small and close to the temporal cortex of the right side and death may have been hastened by erysipelas. Of the patients with softening, one died after twelve hours and one lived sixteen days, the average being four days. These results seem to be in accordance with Spiller's[4] observations.

GROUP B, IN WHICH CONSCIOUSNESS WAS NOT LOST SUDDENLY

The second group includes those cases in which the initial disturbance of consciousness was rather mild and then gradually increased till in about ten or fifteen minutes or longer the stage of coma was reached. Partial recovery frequently occurred for short periods of time. There were eleven hemorrhages and only three softenings with this type of onset. Premonitions were recorded in each case of the softenings as well as in five of the eleven hemorrhages. Vomiting occurred only once and then with hemorrhage. General convulsions did not occur in any case, whether of hemorrhage or softening, but in one case of hemorrhage convulsive movements of the upper extremities preceded impairment of consciousness by a few minutes. In every case hemiplegia was present. Twice hemorrhage originated from a cortical vessel, and a large mass of blood was found covering much of the cerebral cortex. As in the preceding group, hemorrhage occurred in the region of the internal capsule and basal ganglia nine times, but the hemorrhages differed from those of the former group in that they were smaller and more localized and blood had not filled the lateral ventricles. Only two were really small, however, one measuring 2 by 2 cm. situated within the lenticular nucleus and implicating about 1 cm. of the internal capsule, and one 3.5 by 3.5 cm., within the frontal lobe near the cortex.

Of the softenings, three had been very gradual in onset. Hemiplegia and aphasia were established slowly, requiring some days previous to the impairment of consciousness. In these cases the left sylvian artery has been occluded and a large part of the cerebral cortex on the left side was destroyed, including the motor convolution, temporal convolution and parietal lobe. There were three cases of hemorrhage in which motor weakness preceded disturbances of consciousness, but only by a few minutes and not by hours or days, as in some softenings.

The average duration of life was six days in this group of hemorrhages; one patient lived eleven days and one died in three days. Unlike those of the previous group, none died during the first twenty-four hours. Each of the three patients in whom extensive softening had occurred lived for five days after consciousness was lost, but motor weakness had preceded the attack by some time, exactly how long could not be determined, still at least four days in one instance. In four cases of softening consciousness had not been disturbed in the least; but each of these had been caused by an embolus of the middle cerebral artery during an acute disease; a large part of the central portion of one hemisphere was destroyed, including all the basal ganglia and part of the temporal lobes. Two patients lived more than a month, and death was probably caused by cardiac failure and not by the cerebral lesion. In one instance of hemorrhage confined to the pons, consciousness was not impaired until the fifth day after paralysis had occurred, and even then it was not lost until a few hours before death.

HEMIPLEGIA

For the purpose of comparison one hundred cases of hemiplegia have been studied. All of these patients were seen at the Orthopaedic Hospital and Infirmary for Nervous Diseases, and were believed to have had an acute vascular lesion of the brain, that is, thrombosis, embolism or hemorrhage. The period of time which had elapsed after the original apoplectic attack and time of the physical examination varied considerably; the average, however, was five or six months.

Thirty-two of these patients complained of various degrees of ill health preceding the date of the onset of apoplexy; headache was described in nine cases, and syphilis was evident in thirteen. The attack began during the course of an acute illness seven times. In only three cases were there more or less definite sensations of numbness and tingling with some pain and discomfort spoken of as occurring on the side of the body which shortly became paralyzed.

In fifty-two cases consciousness was said not to have been disturbed even in the slightest degree, but these patients did complain of various sensations, such as headache, vertigo, weakness, nausea, faintness, etc., which are too indefinite to be classified, but which might be collectively considered as the "apoplectic equivalent." Hemiplegia developed during sleep in twelve cases.

4. Spiller: Univ. of Penn. Med. Bull., October, 1906.

Consciousness was lost suddenly before any signs of paralysis were noticed in seventeen cases, but in five cases paralytic signs developed first and were then followed by a sudden loss of consciousness. Slow progressively increasing loss of consciousness was rare, occurring only three times, twice preceding any sign of weakness, while in the one case definite impairment of function was the first indication of disease.

Convulsive movements preceded paralysis by some hours in two cases, but general convulsions were not recorded. Aphasia was recorded in nine cases.

The character of the paralysis in every case was the ordinary type of hemiplegia or hemiparesis, with increased tendon reflexes. Sensation was impaired in eight cases, and the face entirely escaped four times.

Many writers have formed the habit of describing premonitory symptoms, which are of value in differentiating hemorrhage, thrombosis and embolism. On purely theoretical grounds it is almost inconceivable that a miliary aneurysm or an arteriosclerotic vessel within the brain in the act of bursting can give rise to symptoms which could be separated from and not confused with the various phenomena of the early stage of the rapidly oncoming apoplectic state. On the other hand, there undoubtedly exist many cases of vascular occlusion in which the lumen of the vessel is cut off gradually, causing thereby gradual impairment of function of that part of the brain nourished by the vessel affected. Chiefly on this ground the statement is often made that premonitory symptoms are absent in cases of hemorrhage and frequently present in cases of thrombotic softening.

Arteriosclerosis or syphilitic arteritis is the common forerunner of most cases of apoplexy. Patients so affected frequently complain of various sensations referable to cerebral disease—headache, vertigo, numbness and tingling of one or more extremities, and a variety of subjective disturbances. These are the symptoms so frequently referred to as premonitions immediately preceding an attack. It must be remembered that when an apoplectic attack begins, the loss of consciousness may develop gradually or suddenly. In the latter case, the starting-point of the attack is unmistakable; but, whenever consciousness is lost very gradually, many symptoms may develop which are in reality caused by the acute vascular lesion, and are indeed actually nothing more than the first and earliest manifestations of a gradual transition from the conscious to the unconscious state. Many apoplexies begin with vertigo, headache, confusion or disorientation, which phenomena may more or less rapidly progress till the grade of profound coma is reached. Taking this point of view, it is evident that symptoms of chronic vascular disease of the brain or arteriosclerosis cannot be distinguished clinically from the earliest symptoms of some cases of apoplexy regardless of the nature of the lesion causing it. This fact is only too well illustrated when it is remembered that some arteriosclerotic patients suffer from apoplectiform attacks which are not associated with cerebral softening or hemorrhages, and which differ only in degree and not in the essential characteristics of the attack itself from true apoplexy.

From what has been said, the so-called premonitions should be more frequently observed whenever consciousness is disturbed at first slowly and therefore incompletely, and less frequently when it is disturbed suddenly and severely.

Many years ago it was said by Trousseau (quoted by Thomas,[5]) that sudden loss of consciousness is rarely if ever the initial symptom of apoplexy. But physicians seldom have the opportunity of observing the beginning of an attack, so that much judgment is required in interpreting the descriptions given by the patient or friends. I was once present where an elderly lady was quietly sitting at the dinner table carrying on an animated conversation—curiously enough, with two physicians—when suddenly she dropped knife and fork from her grasp and fell backward in her chair totally unconscious; some hours later she was dead. If premonitions had been present, they would surely have been noticed.

Of the thirty-eight cases of hemorrhage which have been studied here, premonitory symptoms of short duration were recorded five times. In one there had been a feeling of excitement and apprehension lasting fifteen minutes, accompanied by convulsive movements of both arms. Numbness and tingling of all four extremities and headache occurred once; general restlessness and excitement were present once; while in two instances there was a feeling of intense general weakness. In each case these symptoms were the first symptoms of cerebral hemorrhage, and were recognized only because consciousness was lost gradually. In one case of softening the patient complained of numbness of one side, and three developed motor weakness before the attack; in each consciousness was gradually lost.

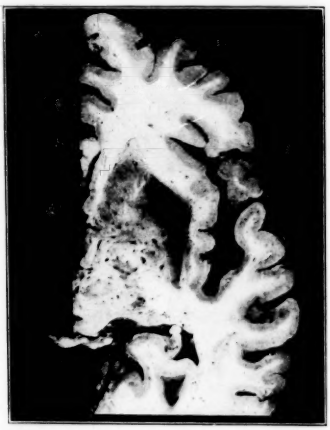
RELATION OF THE SIZE OF THE LESION TO SEVERITY OF ATTACK

As already mentioned, the hemorrhages of the first group, with only one exception, were large, and in all the initial apoplexy was sudden and severe. Those of the second group were smaller, though only two were really small; the smallest of all measured 2 by 2 cm. In these apoplexy was less abrupt than in the former group. Naturally hemorrhages may vary greatly in size. Cases have been observed in which nearly all of one hemisphere and part of the other have been destroyed, and many are seen as small as an English walnut. Small hemorrhages, however, are exceedingly uncommon—that is to say, those as small as a pea. Attention has been called to this fact by von Monakow.[5] The cases studied here would indicate that large hemorrhages are most common and also that the sudden severe types of apoplexy usually result. I know of no instance in which a large spontaneous hemorrhage within the brain did not produce loss of consciousness, though the initial onset may not have been sudden. Even a moderately small hemorrhage may cause a severe and sudden attack, as in one case recorded in the first group. It seems correct to conclude that the size and rapidity of growth of the hemorrhage may have a very decided influence on the severity of the initial apoplexy. No doubt Gowers'[6] statement that "the intensity of apoplexy is a graver indication than its duration" can be explained on those grounds, for the duration of life is apt to be longer when hemorrhage is small. The cases of my first group seem to corroborate this statement. Of softening from thrombosis or embolism, in a measure the same statements are true, but not so regularly.

Fairly large softenings are occasionally found at necropsy which had not caused very distinct apoplexy

5. Von Monakow: Gehirnpathologie, 1897, p. 97.
6. Gowers: Text-Book of Nervous Diseases, 1907, ii, 443.

during life. Indeed, there are four cases already referred to in which the middle cerebral artery had been occluded, two by embolism, during the course of an acute endocarditis, and twice by thrombosis during pneumonia. In each a large portion of the basal ganglia and adjoining structures were destroyed, yet a very indistinct apoplectic attack was observed during life. The smallest hemorrhage of which I have knowledge is shown in the photograph given here. It occurred in a patient in the service of Dr. Charles K. Mills at the Philadelphia Hospital, and the specimen is in Dr. Spiller's laboratory. Unfortunately the history of this case is incomplete, but it is probable that there had not been a very distinct apoplectic attack, consciousness was not disturbed early. On the other hand, there were two softenings recorded in the first group measuring only from 3 to 4 cm. in diameter, with distinct apoplexy. Again Gowers[7] has said, "of lesions of equal size the more sudden the obstruction



Very small intracerebral hemorrhage which caused death.

the more pronounced the attack." I would accept the statement as correct in the majority of instances, and would further enlarge on it by adding that the more gradually vascular occlusion is produced the less pronounced the attack or the more gradual the onset. This is well illustrated by the cases mentioned in the second group, in which the sylvian artery had become thrombosed; in each of these cases there had been a very gradual and progressive development of paralytic symptoms with little disturbance of consciousness. Spiller[8] has called attention to this type of case in distinction to the gradually increasing hemiplegia of cerebral tumor. In this connection it should be remembered that when a vessel is suddenly occluded, apoplexy may immediately result, together with paralysis, but actual softening of the brain requires at least a day to develop after occlusion takes place. I have been able to prove this to my own satisfaction by experiments on dogs.

It is difficult to explain the very sudden loss of consciousness that occurs in some cases of cerebral softening; a rapid onset, however, suggests that the affected vessel is occluded suddenly. Cases of so-called angiosclerosis which have been carefully studied with the ophthalmoscope seem to furnish considerable evidence to strengthen the belief that cerebral vessels may be affected like the arteries of the retinae, which become instantaneously and permanently occluded. In some instances the retinal vessels have been watched while being occluded.

This subject has been recently discussed by Taylor, Werner and Coates.[9]

Assuming that coma when caused by hemorrhage was due entirely to increased intracranial pressure, Cushing[3] (quoted by Thomas) proposed opening the cranium and evacuating the clot. There can be no doubt, that when hemorrhage is fairly large, the intracerebral pressure is greatly increased and that this is one of the most important factors producing coma and death, for it is not uncommon to find at necropsy that the hemisphere in which hemorrhage has occurred is distended and larger than the opposite or sound side. In a recent communication Marie[10] stated that coma is due much less to the sudden eruption of a large mass of blood into the affected hemisphere than to the compression of the brain caused by the presence of this quantity of blood. The sudden eruption of the blood produces ictus, which is a transitory phenomenon; the compression of the brain produces coma, which is a persistent phenomenon; but a deep and lasting coma is not produced unless the opposite hemisphere is compressed also. He was able to demonstrate that hemorrhages measuring as much as from 5 or 6 cm. by 3 or 4 cm. did not produce coma unless there was compression of the opposite side. When the unaffected hemisphere was compressed, the coma was profound and absolute. As a result of these observations, Marie advocates trephining on the sound side in order to relieve pressure. In four instances his results were good, but he does not give histories of his cases.

Marie's views would seem to be logical. In certain cases operation might be beneficial, for without operation death cannot be prevented.

CONCLUSIONS

It is thoroughly appreciated that "generalizations may be dangerous," for exceptions always occur. Nevertheless, the following conclusions would seem to be warranted:

Spontaneous intracerebral hemorrhages are apt to be large; very small hemorrhages are rare. Of seventy-two specimens examined, only four measured less than 4 cm. in their broadest diameter.

It is certain that large hemorrhages are always fatal, and it is also certain that small hemorrhages may be fatal, and it even seems probable that hemorrhages are always fatal, no matter whether small or large.

When repeated attacks of apoplexy with hemiplegia occur in the same patient at different times, the final or fatal attack may be due either to softening or to hemorrhage, but the former non-fatal attack is invariably caused by vascular obstruction and softening and not by hemorrhage. Repeated attacks of intracerebral hemorrhage are not compatible with life.

Small and moderate-sized lesions within the brain, generally described as cysts, are apt to be considered

7. Gowers: Text-Book of Nervous Diseases, 197, ii, 432.
8. Spiller, William G.: Brain Tumor, THE JOURNAL A. M. A., Dec. 18, 1909, p. 2078.
9. Taylor, Werner and Coates: Tr. Ophth. Soc. U. Kingdom, 1913, xxxiii, pp. 1, 9, 30.
10. Marie: Bull. d. l'Acad. de méd., Paris, Nov. 18, 1913, p. 405.

the result of vascular occlusion; but in some instances such lesions may be produced by hemorrhage which has become healed. Their true origin in some cases seems uncertain, but they have been classified here as softenings.

The duration of life is generally longer with small hemorrhages than with large ones. Sudden death within a few minutes after the onset of apoplexy does not occur even though the lesion is a large one. It is remarkable that fairly large hemorrhages may not in all instances cause rapid death. Spiller[6] has recorded a case in which a clot was found partly encapsulated and measured 7 by 2.5 cm., yet the patient lived almost two months.

The type of apoplexy produced by hemorrhage and by vascular obstruction is not of a distinctive kind. The onset and character of the apoplexy may be exactly alike, though the lesion is entirely different. But a sudden onset with rapidly developing and persistent coma usually indicates hemorrhage. A slow onset with premonitory symptoms without profound coma may be due to hemorrhage or to softening, but the less severe the disturbance of consciousness the more likely that it is caused by softening and not by hemorrhage.

Premonitory symptoms are not characteristic of the lesion; as a general rule they are recorded in the milder types of apoplexy in which the onset is not abrupt.

Slowly increasing loss of consciousness ending in profound coma, known as ingravescent apoplexy, is generally due to hemorrhage.

It is doubtful if hemorrhage ever occurs without causing very distinct disturbances of consciousness, but it is certain that many softenings do occur without producing distinct apoplectic attacks. Most non-fatal cases of hemiplegia are caused by vascular occlusion and subsequent softening. The mere fact that life is preserved is in itself indicative of the absence of hemorrhage.

The type of apoplexy probably depends more on the size of the hemorrhage than its situation, but with softening the rapidity with which the vessel is occluded may influence the rapidity of onset of the attack as well as the extent of the lesion.

I am indebted to Dr. Allen Smith for the photograph and I also wish to express my thanks to Dr. Spiller, who very kindly allowed me to use the specimens in his laboratory, and to Dr. Warfield T. Longcope for the material obtained in the Ayer Clinical Laboratory of the Pennsylvania Hospital, and also to the Medical Staff of the Orthopaedic Hospital and Infirmary for Nervous Diseases for the use of the records of cases examined in their service.

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The Use of Vaccines.—We must ever keep in mind, in considering the value to be derived from the use of vaccines and antitoxins, that we have to deal in each case with at least two forms of life. We shall do well to keep constantly and intently before us that each of these living agencies possesses more or less limited biologic characteristics which are in large part peculiar to its own particular kind, and are even at times exceedingly individual in character. Expressing this idea more concretely, we say that a human being possesses degrees of susceptibility and immunity to the microscopic invaders, while we say that the attacking microbic army possesses saprophytic, parasitic or pathogenic properties, according as we merely live happily in their company, simply tolerate their society, or actually succumb, in varying degree, to their attacks on us.—H. D. Pease.

TECHNIC FOR ARTHROPLASTY OF THE SHOULDER-JOINT

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AND
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With our limited access to the literature we have been unable to find any satisfactory description for an arthroplasty of the shoulder-joint. Having a case for operation, we began the work on the cadaver and developed the following technic, which we believe is nearest anatomically correct of anything we have been able to find.

In this operation we have utilized a portion of the short head of the biceps for a flap to interpose, because it is covered by more dense tendinous sheath than any other structure in the neighborhood of the shoulder-joint, is correctly located anatomically and we believe in the majority of cases will furnish sufficient fascia and muscle to make a flap of necessary dimensions. The flap obtained is quite sufficient to line the glenoid fossa and cover the entire head of the humerus.

Fig. 1.—Broad, tendinous, short head of biceps (*A*); from Cunningham's Anatomy.

In our clinical case there was considerable enlargement of the head of the humerus, and it would have been necessary either to reduce it in size or to obtain an additional flap for interposition. We obtained the additional flap by taking off a strip from the under side of the reflected deltoid sufficient to fill out the small amount which we lacked in our biceps flap. Use of the pectoralis major for an interposing flap is impracticable, owing to the distance of its attachment from the joint and to the presence of other anatomic structures between it and the joint. In addition to this the sheath of the pectoralis major is very delicate and there is but little fat on its anterior surface. There is no fat on the under surface of the deltoid, and its sheath is also very thin and delicate. The opposite is true of the short head of the biceps.

In addition to this, the attachment of the inner head of the biceps is to the coracoid process, which gives it a pedicle in exactly the right location.

A reversed letter S incision is made, beginning at the junction of the middle and outer third of the

Fig. 2.—Reversed S incision beginning at junction of middle and outer third clavicle, passing outward half-way between coracoid and acromion processes, then downward and inward to vertical line, inner side of arm, curving outward to point 4½ inches directly below acromion process.

clavicle, passing outward half-way between the coracoid and acromion process, then inclining forward and downward to the vertical line of the inner side of the arm, and then downward and backward to a

Fig. 3.—Skin flaps reflected, showing separation of muscle fibers in sulcus between deltoid and pectoralis major, exposing short head of biceps in lower angle of wound.

point 4½ inches directly below the acromion process. This incision gives an abundance of exposure, and just to the inner side of the wound will be observed the sulcus between the pectoralis major and the deltoid. These muscle-fibers should be separated, coming down directly on the tendinous attachment of the inner head of the biceps.

To expose the field properly, the tendon of the pectoralis major should be transfixed with a linen thread, and then cut loose from the humerus; the attachment of the inner fibers of the deltoid is transfixed and severed from the humerus, which will facilitate its retraction, making a complete exposure of the joint-capsule and inner head of the biceps. The forefinger of the left hand is passed beneath the inner head of the biceps, separating it from the coracobrachialis, and then its sheath and fibers are cut across 4½ inches below its attachment at the glenoid cavity, it being necessary to take about half the muscle, giving a fan-shaped flap 4½ inches long by 3½ inches wide at its distal extremity.

The capsule of the joint is then opened, and the head of the humerus separated from the glenoid fossa, the long head of the biceps being preserved if possible. If the capsule is much thickened and adherent, the long head of the biceps is liable to be lost in this

Fig. 4.—Pectoralis major tendon transfixed, cut from humerus, part of attachment of deltoid transfixed, cut and reflected, flap raised from short head biceps, to origin at coracoid process, capsule opened and long head of biceps displaced inward.

mass. Therefore it is much more convenient to disregard it, cutting it across as the capsule is opened. Even in a normal shoulder-joint it is difficult to dislocate the head of the humerus with the long head of the biceps in place; when not adherent or lost in the thickened capsule it may be retracted to the inner side, allowing the head to be dislocated. Enough of the capsule is severed to mobilize the joint completely; three No. 1 chromicized catgut sutures are attached, one to each corner and one to the center of the flap, and the forefinger of the left hand is passed into the joint to the distal extremities of the capsule attachment to the humerus in such locations as will be found necessary to bring the flap into proper position. A very large curved needle is threaded on each of the guy-ropes, guided by the finger pushed through the capsule, soft tissues and skin to the surface, and then used to pull the flap into place, and when tied externally, to anchor it there securely. Two or three additional catgut sutures will be found neces-

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sary at other points to hold the flap in proper position, making a complete lining for the cavity. If the long head of the biceps has been displaced, it should now be replaced and the sheath closed over it in the bicipital groove. If it was lost in the thickened capsule and severed, the capsule at this point should be securely sutured. If the capsule seems to be sufficiently free to allow good motion in the joint, it should be sutured; otherwise it is better to leave it unsutured except at the long head of the biceps, than greatly to restrict the arc of motion. If the pectoralis major was so contracted that it would interfere with the motion of the joint it should not be reattached to the humerus, unless it was thought best to do some plastic operation to lengthen it. The part of the deltoid severed should be carefully reattached to the humerus; the arm put in a cast at right angles to the body, including the chest, with the forearm flexed if the long head of the biceps has been severed. The cast should be removed in ten days, the sutures removed and gentle passive motion begun.

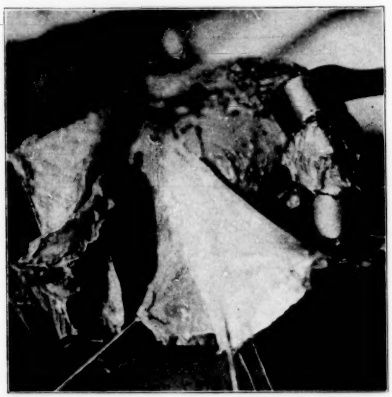

Fig. 5.—Smooth, dense, fan-shaped fascia over anterior surface flap, or insert, this measuring 4½ inches long and 3½ inches wide at extremity, and ¾ inch wide at glenoid cavity, with the three threads attached to draw it into place.

REPORT OF CASE

J. W., aged 44, German, carpenter, who had had only the sicknesses of childhood, and who denied all venereal disease, in November, 1912, was working in a cold basement and took "cold." This was followed by a chill, and six or seven days later he began to have a swelling in the region of the right shoulder. This was very painful and extended down the upper arm to the elbow. Pus formed, and a large quantity was evacuated through an opening just above the elbow. Three days after the evacuation of this pus, an abscess had to be opened on the inner side of the right leg just above the ankle. After a tedious convalescence both of these openings healed, and the shoulder-joint was never incised. After the recovery, however, the patient found that he had very imperfect use of the right shoulder and considerable atrophy of the shoulder muscles, particularly the deltoid.

In June, 1913, six months after the onset of the trouble, he was anesthetized and the friable adhesions in the shoulder-joint were broken and extension was put on the arm at right angles to the body. After a few days passive motion was begun and the extension was kept on for ten days. Owing, however, to the irregular attendance of the patient and his inability to stand the necessary pain, the adhesions reformed, and when he returned six months later he had bony ankylosis in the shoulder. The arm was carried by the side, the deltoid muscle was greatly atrophied, the pectoralis major contracted and he was unable to follow his trade as a carpenter.

Fig. 6.—Guy-ropes of catgut have been passed through suitable locations at junction of capsule and neck of humerus, through the muscle and skin posteriorly, ready to draw flap into place and act as anchor sutures to hold it there, when tied externally.

Jan. 13, 1914, arthroplasty was performed according to the foregoing technic, except that the head of the humerus was considerably enlarged and a few muscle-fibers were turned in from the under side of the deltoid to make the biceps insert large enough to cover completely. At operation there

Fig. 7.—Flap in place with two anchor sutures to capsule; other three at extremity of flap do not show.

was found to be considerable bony deposit in the lower fourth of the capsule, so that it was impossible to pass the needles through it with anchor sutures, and they had to be passed on each side of it.

At the time of operation the tendon of the pectoralis major was not reattached because of its contraction. The wound

was dressed in carbolized gauze, the arm at right angles to the body enveloped in a cast with the forearm at right angles to the arm.

The best roentgenograms which we were able to secure were not satisfactory. They showed the bony deposit in the

Fig. 8.—Patient before operation. Owing to atrophy of the upper-arm muscle, it was only by extreme effort that he was able to bring the hand to the level of the waist. No joint motion; scapular motion entirely.

lower part of the capsule, however, and absence of the joint cavity.

Six weeks after the operation he is again at work at his trade as carpenter, with perfect motion in his shoulder but some restriction of the arc because of periarticular contractions, contraction in the lower part of the capsule and atrophy of the deltoid muscle. The muscle is developing rapidly and

Fig. 9.—Six weeks following operation, showing considerable improvement in muscles; the arm can now be brought almost to right angle. The patient can comb his hair and do all his work as a carpenter, except overhead work. Motion is restricted only by a periarticular contraction, which is rapidly improving.

the arc of motion is also increasing rapidly, and he can do all kinds of work now, except overhead.

There has been entire absence of pain since the first day or two following the operation, and even then the patient never required morphin.

THE EFFECT OF INJECTING COLLARGOL INTO THE RENAL PELVIS

PRELIMINARY NOTE *

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Ever since the introduction, by Voelcker in 1905, of a method of injecting solutions into the renal pelvis for roentgenographic purposes, the question whether or not such substances damage the kidneys or other organs has been actively discussed. During the past few years a number of deaths have occurred within a short time after the injection of collargol into the renal pelvis, and these fatalities have aroused even greater interest in the method. Assisted by Dr. E. W. Schnoor, I have made an experimental study of the effect of the injection of collargol solutions into the kidneys of dogs and shall report our results in detail at the Atlantic City Session of the American Medical Association in June. We have imitated the conditions as found in the human being more closely than any previous investigators, and in addition have been the first to study the effect of injecting solutions under varying degrees of pressure, as measured by the manometer. For the purpose of placing on record at this time the results obtained in two experiments in which death was due to collargol, we deemed it advisable to make this preliminary report.

In Experiment 304, from which the sections shown in Figures 1, 2 and 3 were taken, a dog's right renal pelvis was injected with 20 c.c. of a 10 per cent. solution of collargol under a pressure of 100 mm. Hg. Our work has taught us that the normal capacity of the dog's renal pelvis is 2.5 c.c. and that as long as only moderate pressure is employed, up to 50 mm. Hg, for instance, and the normal capacity not greatly exceeded, no harm results. The animal in this experiment died within five minutes after the injection of a

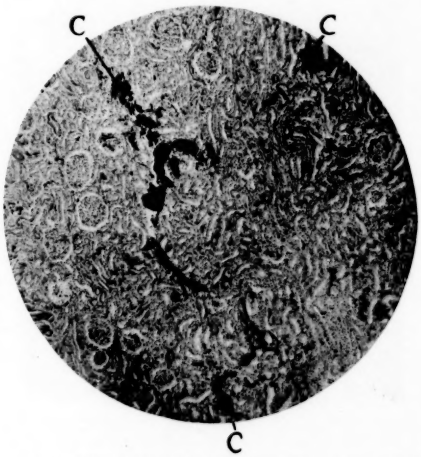

Fig. 1.—Section of kidney from Experiment 304 showing how collargol (C) is forced into intertubular connective-tissue spaces of medulla; 20 c.c. collargol injected under 100 mm. Hg pressure.

quantity eight times the capacity of its renal pelvis and under doubly as much pressure as it is safe to employ when the quantity used is even equal to the capacity of the renal pelvis. Necropsy was performed immediately, and showed large quantities of collargol in the inferior vena cava, and the right auricle and ventricle. There was a smaller amount of collargol in the left side of the heart. The lobes of both lungs were uniformly black and showed microscopically the condition shown in the photomicrograph (Fig. 3). Almost every interalveolar capillary and the blood-vessels accompanying the bronchioles were filled with collargol. The liver showed many raised areas on its surface, which were seen microscopically to be due to masses of collargol (Fig. 2), and the silver salt could also be seen in the blood-vessels of the liver acini. The nodules on the liver were due to these collargol infarcts or deposits (Fig. 2). The spleen and gastric

* From an experimental study of the question at the Morris Institute for Medical Research of the Michael Reese Hospital.

mucosa showed many hemorrhagic areas and deposits of collargol. The kidney (Fig. 3) showed the typical appearance described by Wossidlo, Smith and others. The collargol had forced its way into cavities arti-

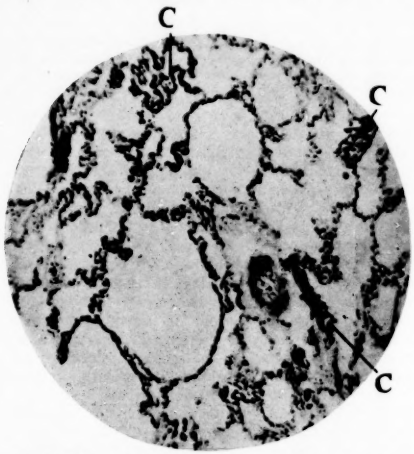

Fig. 2.—Section of lung from Experiment 304, showing advanced degree of collargol embolism. Note how almost every capillary in the septa between the alveoli is filled with the collargol (C). Animal died five minutes after injection of 20 c.c. collargol under 100 mm. pressure.

ficially formed in the interstitial connective tissue, and in places one could see the collargol just outside of the vessels, separated from the lumen by the endothe-

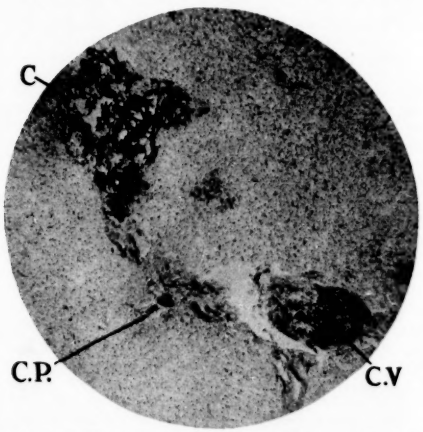

Fig. 3.—Section of liver from Experiment 304 in which animal died five minutes after injection of 20 c.c. of a 10 per cent. collargol solution into pelvis of right kidney (Fig. 1) under 100 mm. Hg pressure. Note collargol infarct at *C*, and also the collargol in a vessel (interacinous) at *C. V.* and the collargol at *C. P.* in the interacinous septum.

lium alone. We are at present examining serial sections in order to find a place of actual rupture of a collargol deposit into the vessel lumen.

In a second experiment (310), 30 c.c. of a 10 per cent. solution of collargol were injected into the renal pelvis through a ureteral catheter introduced through the vesical orifice of the ureter, while the bladder was held open as in Experiment 304. The pressure employed was 100 mm. Hg, the same as in Experiment 304. In spite of the large amount injected (30 c.c.) and the high pressure (100 mm.), the greater part of the collargol escaped into the tissues around the renal pelvis. The animal died thirty minutes after the injection. The lungs (Fig. 4), liver, spleen and kidneys showed deposits of collargol in the blood-vessels and interstitial connective tissue as in the other experiment but in far smaller amount, because only a small amount of the collargol entered the systemic circulation through the renal veins. We have seen death result in two animals from extensive and widely distributed collargol embolism, and believe that these experiments offer for the first time a logical explana-

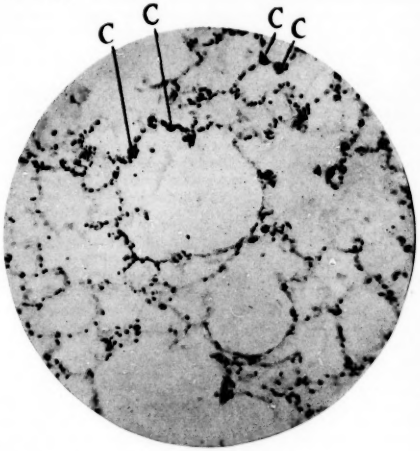

Fig. 4.—Section of lung from Experiment 310; 30 c.c. of 10 per cent. collargol injected into right renal pelvis under 100 mm. pressure. Most of collargol escaped into connective tissue around renal pelvis. But little collargol entered systemic circulation and lung shows minimal degree of collargol embolism of pulmonary capillaries at *C*.

tion of the deaths observed in the human being. We shall postpone further discussion of the subject until the paper is presented in full.

31 North State Street.

Constructive Medicine and Good Housing.—We have done great things, and in the doing of them have created a new profession, that of preventive medicine. Since the days when the physician was content to cure those already sick to these days when the physician, whatever his technical titles, labors to keep men from becoming sick, we have advanced far. But perhaps the time has now come when we must create another profession, that of "constructive medicine." Its field may be even larger than the field of preventive medicine, the multitude of its practitioners divided into a greater number of groups than those who now guard our food, our water, our air and our neighbors from infection and contagion. And one of its tasks will be to see that our houses are adapted to serve as family homes. For that is what good housing means. —John Ihlder, *Amer. Jour. Pub. Health.*

ARGYRISM FOLLOWING THE USE OF COLLARGOL

ANTONIO M. CRISPIN, M.D.
NEW YORK

Since argyrism is a rare condition, a report of the following case, which came under my observation recently, may be of interest. We do not see the baneful effect of chronic silver poisoning, as did our forefathers, because we do not employ this metal internally so often as they did. There is nevertheless a danger to argyrism resulting from the prolonged use of the colloidal preparations of silver now in vogue, especially since the manufacturing houses advertise widely that these preparations are innocuous and vaunt their virtue to the skies.

The patient was a young woman sent to me by her physician, with the request that she be operated on. In his letter he said that she had been suffering for years from gastro-intestinal troubles, which he attributed to gall-bladder obstruction. The most noticeable thing about the patient was her complexion, which had a dark bluish hue, with bright glistening eyes, compelling the wonder and admiration of all who beheld her. To the medical man it suggested a congenital heart lesion or intense cyanosis. This chromatic effect was a source of constant worry and anguish to this otherwise pretty girl. Sunlight seemed to increase the darkness of her color.

Examination of the chest revealed a perfectly normal heart and lungs. The abdomen presented a slight tenderness over McBurney's point, and slight rigidity of the right rectus muscle. The most careful search failed to show anything abnormal with the hepatic function, nothing in fact to account for the blueness or supposed jaundice. By interrogation it was elicited that for four years she had taken collargol internally under her physician's advice, and that after that she had become jaundiced, and they both attributed it to obstruction to the flow of bile.

This was then a case of chronic argyric poisoning, and since collargol is a colloidal silver preparation, said to contain 80 per cent. of silver, the cause of the patient's deeply dyed skin seemed clear. Examination at the French Hospital revealed no abnormality with the circulatory or biliary system. The blood-count showed a marked anemia and no parasites. The diagnosis of chronic appendicitis and argyrism was made.

Before operating it was thought prudent to improve the patient's general condition, and incidentally to try to clear her complexion. Potassium iodid had not the slightest effect on her color. During the preoperative preparations the patient developed an attack of acute coryza, for which I prescribed 10 grains of hexamethylenamin, when to my astonishment and her great joy, her color began to fade, becoming several shades lighter. She informs me that when she takes her bath there remains on top of the water a supernatant film, resembling oil, which she had never observed before. She was delighted with the result and naturally desired to continue with the hexamethylenamin medication.

At operation, performed at the French Hospital, I did not find any abnormality with the liver or gall-bladder, but a chronic inflamed and adherent appendix. This was removed, and the patient made an uninterrupted recovery. A noteworthy condition, observed by all, was that her tissue, muscles and intestines had a blueish tinge.

Few if any will have the courage to persist in one medication for such length of time, and one does not know which is more to admire, the persistency of the doctor or the constancy of the patient.

The suggestion which I wish to make is, that if there is another unfortunate person suffering from argyrism, hexamethylenamin deserves a trial.

854 Lexington Avenue.

A NEW TECHNIC OF ROENTGEN-RAY EXAMINATION FOR EARLY DIAGNOSIS OF CANCER OF THE ESOPHAGUS

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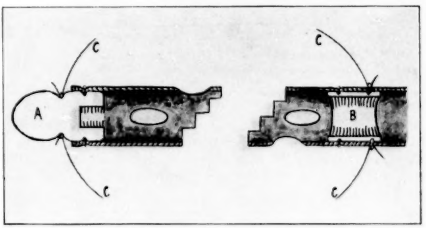
Professor of Clinical Medicine, New York Polyclinic Medical School and Hospital; Visiting Physician, New York Polyclinic Hospital; Chief Gastro-Enterologist, German Poliklinik; Visiting Gastro-Enterologist, People's Hospital; Consulting Physician, Beth David Hospital
NEW YORK

About a year ago I published an article[1] in which was described a method of plugging the cardia to hold bismuth suspensions in the gullet so as to obtain sharp outlines of it in radiographic plates. As experience with the method went along, it was learned that certain unsurmountable difficulties were encountered. These were, the marked degree of distress some persons suffered when the cardia was plugged tightly enough to hold the suspension within the tube, the distress caused in the gullet by forcible peristalsis trying to overcome the plugging below, a dyspnea some experienced when the gullet was distended, regurgitations of bismuth into the mouth, and the



Apparatus for early diagnosis of cancer of the esophagus.

fact that quick work was necessary in making the plates or the peristalsis would overcome the plugging beyond the point that traction on the bag seemed safe. It was learned that certain cases of even minor lesions of the gullet had an intolerant condition of the tube, in which tremendous and most powerful peristalsis invariably ensued when plugging and distention of it was brought about. To obviate these as far as possible, a number of changes in technic were tried, which finally culminated in the one here described, which seems as near perfect as possible. By this method there is distinctly less substernal and general chest distress, less dyspnea and forcible peristalsis, and these always under control, no regurgitation of bismuth suspension into the mouth and loss into the stomach, and time may be taken in making the observations and plates, the latter being an important factor for satisfactory Roentgen-ray work.

The apparatus now in use, which is giving complete satisfaction, is the following: A piece of soft elastic tubing, about the length of an ordinary stomach-tube but narrower, is cut across about 23 cm. (9 inches) from one end. The short piece is fenestrated with a number of rather large openings which can easily

1. Bassler, Anthony: Early Diagnosis of Cancer of the Esophagus, a New Technic of X-Ray Examination, THE JOURNAL A. M. A., April 26, 1913.

be cut in it with an ordinary scissors. The solid brass tip (*A*), bored at the inside to hold the end of the mandrin, is tied in one end. A brass collar insert (*B*) is tied to the other end (this collar has two grooves for strings to hold the tubing and the condom). An end of the remaining tubing is now fastened over the brass collar. A skin condom (*C*) is cut at its tip and tied on end piece *A*, and to its upper end in the groove of collar *B*. About 18 cm. (7 inches) above the condom is placed one of the ordinary kinds of pinch-cock. The rest of the apparatus consists of a spiral wire mandrin, of diameter to fit into the bored hole in tip *A* and long enough to extend well beyond the entire length of tubing, and some form of hand-syringe of about 180 c.c. (6 ounces) or more capacity.

Some points in the technic of the use of this apparatus are important. With the patient stripped, the length of the gullet and mouth are measured by the apparatus. This is done by holding the end piece *A* at the ensiform and coursing the tubing upward over the sternum, the left side of the neck, tightly over the external ear, where it joins the head, and forward to the incisor teeth. My custom is to slip the distal end of the pinch-cock to this measured point so as to mark it for introduction. The mandrin is now put in, the pinch-cock closed on it so as to hold the tube stiff, the tube and condom are well soaked in warm water so as to soften the condom, and introduction to the pinch-cock is made. The pinch-cock is now opened, the mandrin withdrawn, and, when possible, the patient allowed a few minutes to become somewhat accustomed to the tube *in situ*. With everything ready, so far as plate-holders, energizer, tube, and tube-shift if stereoscopic plates are to be made, the patient is now prepared. The first step is to extract the air from the apparatus. This is done with the syringe by simply attaching it to the tube, sucking the air out of the apparatus, and pinching the cock so that none will flow back. The acacia-bismuth, or finely powdered barium mixture, ready, the syringe is filled, fastened into the tube, the pinch-cock opened, and it is run into the tube. At the first sign of distress from distention of the condom within, there should be a moment's pause with the injection. Usually more can be delivered after that, but one should not try to deliver the full contents of the syringe unless tolerated. The pinch-cock is then closed, the syringe detached, and after a few minutes the plates are made. After this the cock is opened and most of the suspension siphoned out, particularly when a little traction on the tube is made in the withdrawal.

By use of this apparatus and technic, sharp outline plates of the entire gullet, from the cricoid through the cardia, are possible. Small lesions in the esophagus, pressure effects on it, the width, and observations of the peristalsis are easily accomplished.

21 West Seventy-Fourth Street.

The Food Problem.—It must always be kept in mind in discussing pure food problems that the public has two vital interests at stake. It must be protected against foods definitely proved to be dangerous to health; but it is quite as essential that it should not be robbed of any safe foods on account of unreasoning prejudices. The use of the milk and meat from cows slightly affected with tuberculosis is a case in point.—C. E. A. Winslow.

TREATMENT OF INFECTED WOUNDS

THOMAS J. WATKINS, M.D.
CHICAGO

It may be said that infected wounds now so seldom occur that it is unnecessary to discuss their treatment. No wounds should become infected except in cases in which operation is performed during acute infections.

The abuse of wounds frequently observed is the reason for this paper, which will include chiefly suppurative wounds following abdominal and vaginal sections. Infected wounds, however, require much the same care irrespective of their location.

SUPPURATIVE ABDOMINAL WOUNDS

The treatment which I employ is as follows: An infected abdominal wound is covered with a hot moist non-irritating dressing of gauze. The gauze is kept moist with boric acid or normal salt solution. The dressing is covered by a protective layer of rubber tissue, oiled paper or silk to prevent evaporation. Heat is supplied by a hot-water bag. This dressing is changed from one to three times daily, depending on the amount and character of the discharge. This treatment is continued until the redness, induration, active suppuration or sloughing disappear; that is, until the wound assumes a healthy appearance. The edges of the wound, if separated, are then drawn together by sterile strips of adhesive plaster and a dry dressing applied.

Sutures are rarely removed, except in instances in which they cut through the skin. The wounds are not probed or separated; no drainage material is inserted and no medication is used. No exception is made in cases of intestinal fistulas or abdominal sinuses.

The moisture is used solely to promote drainage. It favors drainage chiefly by preventing coagulation and desiccation of the discharge. The heat increases the blood-supply and hastens suppuration, and has some of the features of the Bier treatment. An extensive suppuration will drain through a very small opening if desiccation of the discharge is prevented. For example, in a recent case of extensive suppuration following an operation for a large ventral hernia, satisfactory drainage occurred through two small openings at the site of tension sutures.

Posture is at times used to promote drainage. Care is observed to avoid all procedures which would tend to disseminate the infection, such as probing, manipulation, separation of the wound or use of rubber tubing, packing, irrigation and the like. It has been known for a long time that the use of antiseptics injures the tissues more than it does the bacteria. Aside from the destructive power of antiseptics and the dangers of dissemination of the infections by irrigation solutions, the force of the fluid mechanically removes some of the delicate reparative tissue.

There is a general tendency to overestimate the ill effects of pus in wounds. Pus is the result and not the cause of the illness. Recovery does not result because the pus disappears, but because the bacteria are destroyed. There is a suggestion that the pus in the early period of suppuration is of some use in destroying the bacteria. In infection in a wound it is probable that the bacteria are mostly destroyed by localized processes and only in a small measure by general immunizing bodies. This, however, must occur to some extent as some of the bacteria must gain

access to the general circulation, and "bacteria are found outside the area of inflammation."

Pus contains active phagocytes. Leukocytes outside the vessel wall actively destroy bacteria, but when in the blood-stream have but little such power.[1] The toxins that accumulate in the pus also destroy bacteria. It is interesting to note that Traub and Lister observed that "blood to which putrefying matter was added had within certain limits the power of remaining sweet," and decided that it had definite bactericidal properties. It is a common observation that bacteria gradually lessen in an abscess. The presence of pus means auto-vaccination. It is suggestive that in certain cases at least it may be better treatment to use autovaccines rather than autogenous or stock vaccines. The damage from pus in wounds is quite generally overestimated. The presence of pus is not an invariable indication for immediate operation. The pus often does less damage than the treatment which is quite generally employed in removing it.

INFECTION IN CASES OF VAGINAL SECTION

This occasionally results, especially in cases in which there has been an extensive operation. If there is much retention of wound secretion, contamination from vaginal bacteria is almost certain to result and produce infection.

Prophylactic treatment is important, especially in regard to strict asepsis and care to avoid retention of wound secretion. The ligation of all bleeding points and the use of a minimum amount of sutures and unnecessary strangulation of tissue lessen the dangers of infection. I have also abandoned much postoperative treatment of such wounds. The treatment usually employed in such cases is to elevate the head of the bed and to apply hot moist dressings over the vulva. The principle of the treatment is the same as in infected abdominal wounds.

RESULTS

I described[2] this treatment before the Chicago Medical Society in 1907, after an experience of two or three years. This treatment has been continued since then and has been modified somewhat by gradual employment of less surgical interference.

I have never had any experience with too early superficial closure of infected abdominal wounds when treated with most dressings. Sinuses will occasionally close on the surface for a short time before complete union results, but will reopen spontaneously without disturbance. The same is true of fistulas.

The special advantages of this treatment are:

1. The patient is but little disturbed mentally or injured physically.
2. The wounds heal quickly as there is little surface for repair.
3. The strength of the wound is relatively not much impaired in the absence of much sloughing.
4. The danger of secondary contamination is minimized.

104 South Michigan Boulevard.

1. Adami: Principles of Pathology, i, 431.
2. Watkins, Thomas J.: Care of Suppurative Wounds Following Abdominal Section, Ill. Med. Jour., September, 1907.

A Golden Rule.—The first rule, then, for a good style is that the author should have something to say; nay, that is in itself almost all that is necessary.—Schopenhauer.

REPORT OF A CASE OF QUININ POISONING

ELIZABETH C. UNDERHILL, M.D., SOUTH HADLEY, MASS.

The patient, S. A. B., a woman, aged 20, American, a student, two days before the illness reported below, had a mild attack of enterocolitis due apparently to some irritating food she had eaten. Half an ounce of castor oil was prescribed and had the desired effect, and in twenty-four hours recovery seemed complete.

At 1 p. m., November 17, one day after recovery from this illness, I was summoned to see the patient, with the message that her former illness had returned. I found her in a state of stupor, answering questions very slowly, or indicating her answer with a grunt. She denied having taken any medicine of any kind since the dose of castor oil. The tongue was extended on request, in about half a minute, very slightly and very slowly. When I endeavored to take the temperature by mouth, she bit off the bulb in a convulsive way, but apparently was not conscious of this act. The pulse at this time was 100, full, and of good quality; the temperature, rectal, was 99.6, and the respiration, 22, of normal character. The stupor continued to grow more profound for about two hours, and then the patient gradually began to emerge from it. From time to time, during this period, she would complain of her head, but we could obtain no definite information as to the nature of the sensations. The pupils were normal at this time, and reacted to light and accommodation. Knee- and ankle-reflexes were unobtainable. The urine was clear, amber and slightly acid; specific gravity was 1.025; there was no sugar and a moderate amount of albumin, ascertained later to be 1.5 per cent. None was present three days later.

About 4 p. m. the patient began to emerge from her stuporous condition and enter an excitable stage. She tossed about and was restrained with some difficulty. She called for help, for prayer, for divine assistance, etc., and in the intervals would be comparatively quiet. The retching and vomiting continued, with short intervals, until about 2 a. m. At 5 o'clock the patient had become quiet and rational, and on further questioning at this time she stated that she had taken, at 9 o'clock that morning, a bottle of 100 2-grain quinin pills. This statement was verified by finding the empty bottle, and by the druggist's statement that he had sold them to her that morning. She gave as her reason for taking them that she was discouraged over her work, thought she was not keeping it up in a satisfactory manner, and therefore would end her life.

Her condition, from this time on, was perfectly rational. She now began to complain of ringing in her ears and fulness in her head, but these symptoms were not excessive. About 6 p. m. her sight began to be impaired and her pupils to dilate. At 9 p. m. the pupils were dilated as widely as possible, and she could not see—could not distinguish between light and dark.

When the cause of her illness was discovered, an ounce of castor oil was administered, but this was promptly evacuated. A second dose was given in half an hour, which was retained long enough to get a satisfactory result. At 9 p. m. 30 grains of sodium bromid and ¼ grain of morphin sulphate were given, but she did not sleep at all.

November 18 the patient vomited a greenish substance once. Soap-suds enema gave good result, with the evacuation of considerable gas. The eye condition remained unchanged. The patient said that she felt all right, but she was greatly worried over her eyes, and showed great remorse for her deed. Ringing and fulness in the ears had disappeared.

November 19 the patient was very alert to sounds and extremely nervous; she was quiet, but tense. The pupils were contracting a little, and she could now dimly distinguish the figure of a person standing by the bed. She had no pain in the eyes or any part of the body and no gastric irritation. During the twenty-four hours 45 grains of sodium bromid and ¼ grain of morphin sulphate were given. The patient slept three hours, from 10 p. m. to 1 a. m., and rested quietly the remainder of the night.

November 20 she slept practically all night and retained food well. She could see a little better, especially in the morning, and could distinguish lights through the window, 300 or 400 feet distant. Dilatation of the pupils remained about the same. The hearing was abnormally acute, and sounds disturbed. During the day 60 grains of sodium bromid were given, and at night 10 grains of trional.

November 24 the condition of the eyes had gradually improved, so that now she could distinguish the features of persons standing by the bed and accurately describe articles of clothing which they were wearing.

Ophthalmoscopic examination at this time showed considerable infiltration of the veins of the retina, but no choked disk. The field of vision was markedly constricted so that only objects held directly in front of the eye could be distinguished.

She now passed from under my care and went to a distant place, but I have obtained a report of her case and find that her eyes steadily improved, until at the end of six weeks after taking the quinin they seemed to have regained their normal condition.

The case seemed worth reporting because of the unusually large amount of quinin taken, and the comparative infrequency of cases of this kind.

It seems quite likely to me that some of the pills were evacuated undissolved from the stomach and bowels during the hours she was under no treatment, for she gave a history of vomiting several times.

A SIMPLE AND RELIABLE METHOD OF STAINING SPORES

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Instructor in Bacteriology, Cornell University Medical College

The remarkable resistance of the bacterial spore to the penetration of dyes and other chemical agents has long been of interest to the bacteriologist, and many methods of staining these bodies have been devised.

Most of these methods are complicated, unreliable and especially unsatisfactory in the hands of students, whose limited time does not allow for the many repetitions usually necessary to obtain definite results.

These considerations led to the search for a simple method which would stain spores consistently in the hands of unskilled workers, and as such, be available in the class-room.

Such a method, which has been successfully employed in this laboratory for two years, is here reported.

PREPARATION OF STAIN

Four gm. of *acid* fuchsin, Grubler, are dissolved in 50 c.c. 2 per cent. watery solution of acetic acid. Two gm. of methylene blue, Grubler, are dissolved in 50 c.c. 2 per cent. watery solution of acetic acid. The two solutions are mixed, shaken and set aside for fifteen minutes. A voluminous precipitate results. The mixture is filtered through a well moistened filter-paper, and the filtrate is employed for staining. (Eosin may be used in place of the acid fuchsin, but does not give as good results.) The reddish purple filtrate will keep for several weeks, but on the appearance of a precipitate should be refiltered.

TECHNIC OF STAINING

A rather thick smear is prepared in the usual manner, and fixed by heat.

The film is preferably made from an agar-culture; if broth is employed it is advisable to use a small amount of blood-serum or white of egg to fix the material to the slide.

The film is covered with a generous amount of the dye and steamed vigorously for one minute, stain being added if necessary to prevent drying.

When washed in water, the film appears stained a bright red.

The slide is now dipped a few times in a dilute solution of sodium carbonate (7 or 8 drops of a saturated aqueous solution in a tumblerful of water), and the moment the film turns blue the action of the alkali must be interrupted by rinsing the preparation in water. The film is now ready to be dried, mounted and examined. The whole procedure takes less than two minutes.

On examination the spores will be found to stain a deep red, and the bodies of the bacteria bright blue, the intensity of the blue stain depending on the length of exposure to the alkali; too long an exposure may cause the spores to stain blue. Old spores, and particularly free spores, stain well, young spores faintly or not at all.

That the exposure to the acetic acid is the essential portion of the method is shown by steaming a film with a 2 per cent. watery solution of acetic acid and resteaming with a watery solution of any of the usual bacterial dyes. On examination the spores will be found to have taken up the stain, even if as weak a dye as Bismarck brown is employed.

By decolorization with alcohol for a few seconds to remove the stain from the bacterial bodies and then counter-staining with a contrast dye, any combination desired may be produced.

The general application of this method seems to be established by the successful results obtained on the following spore-bearing strains: *Bacillus subtilis, B. anthracis, B. megaterium, B. sporagenes, B. lacti morbis, B. putrificus, B. oedematis maligni, B. tetani, B. mesentericus, B. cereus*, and the bacillus of *symptomatic anthrax*. A failure must be recorded with the *B. mycoides*, but this strain also proved resistant to all the standard methods.

The advantages claimed for this method are its simplicity and reliability.

It may be of interest to those engaged in teaching to know that this method has been used in class-room work for the past two years and has yielded uniformly reliable results.

A number of the strains employed were obtained from the collection at the American Museum of Natural History, for which I desire to express my thanks to Prof. C. E. A. Winslow.

Boils.—Some time in the early eighties a Dr. Clay of London (in the *Lancet*, if I remember correctly), recommended the use of piperin, the active principle of black pepper, for treatment of furunculosis. Having been from early youth susceptible to this infection myself, I gave the matter unusual attention, with the result that from that time I have treated practically all of my cases with this remedy. Dr. Clay's claim for piperin was a rational one, and will be much more readily understood now than it was thirty years ago. It was that piperin as an intense capillary stimulant brought about increased skin resistance which caused an arrest of development in beginning pustules and subsequent immunization for that period of infection. His method was to administer it in quite large doses at first or until the physiologic effect manifested in an intense burning sensation over the entire body was produced, afterward giving it in smaller doses for a somewhat extended period. In many years of this treatment, I have had no failures except in the aged, or those with special complications. In younger persons it has, as a rule, proved superior to autogenous vaccines. Beginning with from 5 to 10 grains three times a day until the effect mentioned above is produced, I repeat at intervals or use it continuously, as deemed best. Small furuncles often disappear without suppuration, while others become limited in their severity. This procedure is absolutely safe, and annoying symptoms speedily subside when the doses are lessened or discontinued. —JOHN L. DRYER, M.D., Santa Ana, Cal.

Appropriation for the Children's Bureau.—In the annual report of Julia C. Lathrop, chief of the Children's Bureau, giving a summary of the work of the first year's bureau and outlining the plan of future work, an appropriation of about $165,000 was asked for for the year 1914. To the great disappointment of the chief of the bureau and of persons interested in child welfare, the appropriation committee of the House saw fit to recommend only $25,000 for the work of the bureau, which seems a ridiculously inadequate sum to carry out the plans of investigation and constructive work prepared by the bureau chief.

New Instruments and Suggestions

A SAFE AND EFFECTIVE METHOD OF NASAL AND NASOPHARYNGEAL DOUCHING*

ELMER L. KENYON, A.B., M.D., CHICAGO
Assistant Professor in the Department of Nose, Throat and Ear, Rush Medical College

The danger inherent in the commercially advertised douches is so evident as to warrant their general condemnation. The objection to them lies in the turned-back position of the head required in their use, since that position encourages entrance of infective fluids not only into the eustachian tubes but also into the sphenoidal, and to a lesser extent, into the anterior ethmoidal, frontal and antral sinuses. Not only that, but the flooding of the nasal cavity and the nasopharyngeal space by the sudden pouring in of a large amount of fluid makes the flow of some of this liquid into these sinuses almost inevitable. And even more, the influx of a large amount of fluid into the nasopharynx almost inevitably sets up a coughing and hawking and swallowing which is likely to throw the eustachian tube open just at the dangerous moment. Nasal douches requiring the tipping back of the head, especially if the amount of fluid thrown into the nose at one time be large, should be considered too dangerous for ordinary use (Fig. 1).

All rhinologists realize this danger, for all have encountered the injurious effects of this method, especially in the incitation of otitis media. Therefore many of them adhere to the ordinary hand atomizer for home douching, unless in exceptional cases; for the small amount of fluid emitted from the atomizer, while, to be sure, serving very imperfectly as a douche, yet carries with it a minimum danger of sinus or eustachian infection. The office atomizer serves well most purposes of nasal and nasopharyngeal douching. It is for home use that special methods are required. Watson Williams (A Coarse Nasal Spray to Avoid the Dangers of the Nasal Douche, *Brit. Med. Jour.*, July 19, 1913, p. 122) proposes a specially constructed coarse nasal spray for home douching. With the head held forward this would be free from danger. Its objection might lie in insufficiency of fluid and of propelling force. The following method, which I have thoroughly tested for years is simpler and more effective.

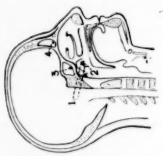


Fig. 1.—Showing the downward direction of the eustachian tube (1, 2) and of the sphenonasal duct (3) with the head turned back, in the position demanded by the commercial douches.

Fig. 2.—Nasal syringe.

Fig. 3.—Method of using the syringe.

In order to douche the nose and nasopharynx effectively and at the same time safely, the following three ideas must be carried out:

1. The head must be held forward, thus preventing the flow of the fluid into the eustachian tube, and tending to prevent its flow into the sinuses of the nose.

2. The fluid must enter the nose in several sufficient streams at different forward angles, but the streams should not be large enough or the force violent enough to excite sneezing or coughing.

3. The naris should not be allowed to become filled with fluid, which might occur if the douching nozzle completely filled the external naris, thus preventing a return flow of fluid.

I use a rubber bulb, preferably with a capacity of 6 ounces, although one of 2 ounces' capacity is practicable. To this is attached a rubber hose about 18 inches long, with a nasal nozzle, or with a nasopharyngeal tube, at the end, as the case requires. The illustrations will make this clear. The tip which I employ is made of glass and is provided with a return groove, so that the fluid will not accumulate in the

Fig. 4.—Nasopharyngeal tube; to be substituted for the nasal tip when the nasopharynx requires special cleansing.

nose. The force employed is of but slight importance and can be easily regulated. If the naris is relatively free from obstruction, some of the fluid from the nasal tip will be projected against the posterior wall of the nasopharynx, but if one desires thorough cleansing of the space back of the nose, he may use the "nasopharyngeal tube." This is about 6 inches long, $\frac{3}{32}$ inch in diameter, is provided with a slightly enlarged end having fine perforations, and is slightly bent at the distal end in the direction of a ring guide at the handle. The tube is passed by the patient through the lower meatus of the nose until it touches the posterior wall of the pharynx. The slight bend in the tube helps the patient to keep the end on the floor of the nose in passing. The holes in the distal end of the tube, pointing in various directions, cause the entire nasopharynx to be cleansed. Since the fluid in the nasopharynx cannot, owing to the downward position of the head, pass toward the larynx, and since the streams are fine and strike gently, cough is not likely to be excited. By withdrawing the tube gradually any part of the naris may also be directly cleansed.

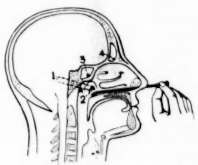


Fig. 5.—Method of passing the nasopharyngeal tube along the lower meatus of the nose into the nasopharynx.

Provided that the (usually alkaline) fluids employed are warm and weak, as they should be, the use of the nasal tip is so simple and agreeable that even young children make no objection. Indeed, it is in the persistent nasal discharges of young children that the apparatus has one of its most needful uses. The nasopharyngeal tube is more unpleasant, but is also less often needed.

The apparatus is sold with the following printed instructions to the patient:

> Washing out the nose (douching) if carelessly done is attendant with danger to the ears. This apparatus avoids such danger, but the following simple directions must be adhered to:
>
> 1. Hold the head well down over a basin.
> 2. After completing the douching remain with the head down until all free fluid has run out the nose or mouth.
> 3. For ten minutes after the douching, when blowing the nose, hold the head well forward.
> 4. In passing the nasopharyngeal tube (see cut) through the nose, keep the tip on the floor of the nose, the ring guide at the handle pointed downward, and use no force. The tube should be passed about horizontally when the head is in the upright position. It should enter the nose for a distance of about 3 inches. When it is felt to have touched the back wall of the throat, draw it forward a quarter of an inch while the douching is being carried on. Also follow directions 1, 2 and 3.

While it has required considerable space for a clear presentation, the method is very simple, is effective, and, more than all else, safe.

104 South Michigan Avenue.

* Presented before the Chicago Laryngological and Otological Society, Oct. 6, 1913.

V. 191

CYSTOSCOPIC BLADDER FORCEPS

HERMAN L. KRETSCHMER, M.D., CHICAGO
Urologist to Presbyterian Hospital; Genito-Urinary Surgeon to Alexian Brothers' Hospital

The removal, under the guidance of the eye, of foreign bodies from the urinary bladder in women, is quite simple, because the short, easily dilatable urethra allows the introduction of a forceps alongside of the cystoscope.

In the male, however, this problem is a more difficult one. Heretofore, I have resorted to the use of Young's cystoscopic rongeur. Soon, however, the biting edge of this instrument

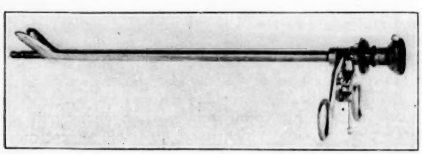


Fig. 1.—Cystoscopic bladder forceps: a modification of Young's rongeur.

becomes dull and full of nicks, and it is apparent that some modification is necessary in order to employ it for the above-mentioned purpose.

Instead of the light, thin blades with the sharp-cutting edge, I have had constructed heavy blades, with corrugated surfaces. The blades are heavy and strong, so that they are capable of holding small calculi which have passed down the ureter into the bladder. The instrument can also be used for removing small or large fragments of calculi remaining in the bladder after litholapaxy, as well as foreign bodies

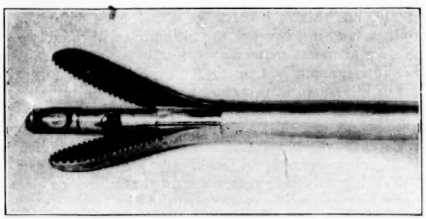


Fig. 2.—Jaws of cystoscopic bladder forceps.

introduced from without. By means of the lock handle, one can grasp the foreign body so that it can be removed without danger of losing it in the urethra during its extraction from the bladder. The cystoscope furnished with the rongeur can be used with this forceps.

29 East Madison Street.

AN APPARATUS FOR THE ESTIMATION OF CHLORIDS IN THE URINE (CHLORIDROMETER)

E. BLASUCCI, M.D., NEW YORK

I think that a rapid and easy method for the accurate estimation of chlorids in the urine is timely, and, I trust, well accepted by the busy practitioner to-day, when functional diagnosis has taken so much preponderance over anatomic conception in renal diseases.

The retention of chlorids in our system (chloridemia) is often the first hint we have of, and the prelude to, a more serious morbid condition, namely, the retention of urea (azotemia, Widal). While for the latter we have a direct method of research by the estimation of urea in the blood, for the former the best element of diagnosis is still the relation between ingestion and excretion of the salt. In order to get in time an opinion on the functional capacity of the kidney, our attention therefore must be directed first to the quantitative estimation of chlorids in the urine.

For the last few years I have been using an apparatus whereby I have reduced the technic for this examination to a very simple procedure. The chemical reaction used is that originated by Mohr; and the results which I get can be compared, in a measure, with those obtained by the most perfected laboratory methods of Salkowski and Neubauer.

A glass tube, funnel-shaped and about 30 cm. long, carries at its lower extremity a mark, "I" (indicator), for potassium chromate, and above this another mark, "R" (reactive), for silver nitrate. There are then other marks for the urine to be added in order to complete the reaction. A long pipet is used for depositing the chromate at the bottom of the tube to prevent the chemicals coming in contact beforehand on the walls of the tube. This is for the sake of accuracy.

By the union of the two solutions a red precipitate of silver chromate is readily formed on shaking. Urine is then added slowly and cautiously (shaking and reversing the tube kept closed by the thumb) in order to catch the right moment when every trace of red precipitate disappears to give place to the formation of a canary yellow due to the reintegration of the potassium chromate. This indicates the end of the reaction. At the level reached by the added urine, one reads the quantity of chlorids per thousand contained in it.

The original Mohr reaction, reversed as I have described, offers the following advantages:

1. The reintegration of the potassium chromate gives a well-defined canary yellow which is readily recognized as soon as every trace of red has disappeared, whereas by the old method it is more difficult to catch the right moment when the first trace of an orange tint (caused by the silver chromate) appears. One might be induced to judge of the change a little too late, as it generally happens. With very dark urines, especially, the superiority of this procedure over the other is evident.

Chloridrometer.

2. The uric acid, the xanthic basis, the pigments and particularly the carbonates which are present in the urine, have greater affinity for silver than chrome has. If we add, according to Mohr, silver nitrate to a fixed amount of urine (chromate being present in order to obtain a red precipitate when all the chlorids are saturated), all those bodies will combine with the silver before any red tint appears. Hence, the greater quantity of silver expended for them shall be accounted for as used for chlorids, which is not so. By the new procedure, the red chromate will disappear as soon as all the silver it contains shall have been absorbed by the chlorids of the added urine, and all those bodies have no chance to combine and retard the reaction. The calculation then will be more correct.

3. By the new procedure the less the quantity of chlorids dissolved, the greater the quantity of urine required, the slower the reaction and so much easier the determination of the right moment when the changing of color takes place. If, instead, the solution of silver nitrate is added to a fixed amount of urine, the reaction will be slower when the quantity of chlorids is large, and will be more rapid when the percentage of chlorids is low, whereas it is just in this case that more precision is required.

As regards the constitution of the scale on the instrument, it must be remembered that the specific weight of the molecule of sodium chlorid (NaCl) is 58.5; that of the molecule of silver nitrate ($AgNO_3$) is 170. If 58.5 parts of sodium chlorid are saturated by 170 parts of silver nitrate, 1 gram of sodium chlorid will be saturated by $\frac{170}{58.5} = 2.9$ gm. of silver nitrate; and proportionately, 0.1 gm. of sodium chlorid by 0.29 gm. of silver nitrate. If we take 5 c.c. of a solution of silver nitrate of a strength of 5.8 per cent., we shall have exactly 0.29 gm. of the salt in it, and it will be changed into silver chromate by the addition of a few drops of a saturated solution of potassium chromate. If we now add urine until the pale canary-yellow color shows us that the reintegration of potassium chromate has taken place, we shall know that all the silver contained in the red chromate

shall have been combined to the chlorids, and to them only. In that quantity x of urine is then contained exactly 0.1 gm. of sodium chlorid and in 1,000 gm. of the same urine $\frac{0.1 \times 1,000}{x} = \frac{100}{x}$ of sodium chlorid are contained. For example: If the quantity of urine used for the reaction was 20 c.c., we shall know that in the urine are contained $\frac{100}{20}$, or 5 gm., of chlorids per thousand; and inversely, of a urine containing 5 gm. per thousand, 20 c.c. will be required (or 100:5); of a urine containing 4 gm. of chlorids per liter, 25 c.c. (100:4) will be needed in order to complete the reaction; and so on.

We can therefore easily build up a scale showing the exact quantities of urines required to determine the reaction, according to the different percentages of chlorids which they contain. The scale is given in the accompanying tabulation.

QUANTITY OF URINE REQUIRED TO DETERMINE THE REACTION

On 0.29 gm. of silver nitrate according to the various Percentages of Chlorids

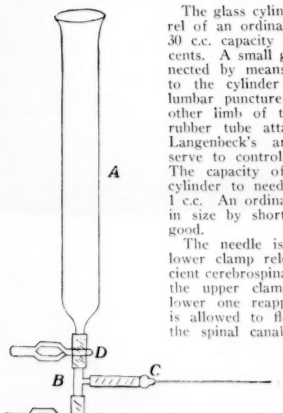
Chlorid gm. Per Liter	Urine c.c.	Chlorid gm. Per Liter	Urine c.c.
1	100.00	9	11.11
1.5	66.66	10	10.00
2	50.00	11	9.09
2.5	40.00	12	8.33
3	33.33	13	7.69
3.5	28.57	14	7.14
4	25.00	15	6.66
4.5	22.22	16	6.25
5	20.00	17	5.88
6	16.16	18	5.55
7	14.28	19	5.26
8	12.50	20	5.00

If the urine should contain more than 20 per thousand of chlorids, it may be diluted with equal parts of distilled water and the test repeated, doubling the figure obtained at the end of the reaction. If, on the other hand, the percentage of chlorids is less than 1 per thousand, one can dilute the solution of silver nitrate with 3 or even 9 parts of water, then reducing the result obtained to one-quarter or one-tenth, respectively. In this way, even the smallest percentages of chlorids in the urine can be determined with accuracy.

679 Lexington Avenue.

INSTRUMENT FOR INTRASPINAL INJECTION

CLARENCE EMERSON, M.D., PH.D., LINCOLN, NEB.
Pathologist, Nebraska State Hospital



Instrument for intraspinal injection.

The glass cylinder (*A*) is the barrel of an ordinary glass syringe of 30 c.c. capacity and cost 10 or 15 cents. A small glass T (*B*) is connected by means of rubber tubing to the cylinder (A), and to the lumbar puncture needle (C). The other limb of the T has a short rubber tube attached to it. Two Langenbeck's artery clamps (D) serve to control the flow of fluid. The capacity of connections from cylinder to needle should be about 1 c.c. An ordinary glass T reduced in size by shortening the limbs is good.

The needle is inserted with the lower clamp released. When sufficient cerebrospinal fluid is withdrawn the upper clamp is removed, the lower one reapplied and the fluid is allowed to flow by gravity into the spinal canal.

The instrument serves its purpose well, can be easily sterilized and is recommended by its cheapness and the ease of replacing broken parts.

Therapeutics

MEAT

It is not proposed to discuss the relative nutritive value of various meats, or the rapidity with which they are digested, but briefly to note a few practical conclusions taught by the physiology of nutrition.

1. Ordinarily, we should consider that the flesh of fish and shell-fish, except perhaps oysters and clams, and of chicken and birds is meat.

2. No marked chemical difference exists between red and white meats.

3. Meat having considerable amounts of fat deposited between its fibers, as fresh pork (sparerib), does not digest so readily as lean meat, such as beef.

4. The delicate, tender portions of porterhouse steak, roast beef, young tender lamb chops and the breast of a young chicken or bird will digest more readily and cause less gastro-intestinal disturbance in those whose digestion is imperfect than will other meats.

5. The important point is, that the final extractives of all meats are alike, and if these are not easily excreted by the kidneys, all meats should be prohibited. This is true in acute nephritis and generally true in chronic parenchymatous nephritis. All acute inflammations of the skin are better on a no-meat diet, and often patients with chronic eczema are benefited by excluding meat from their diet.

6. Any particular meat that causes indigestion would harm such a patient more than a meat that he digests readily, but this is because of the formation of by-products and not because the ultimate end-products of the several meats materially differ.

7. It is generally true that unless there is a good deal of intestinal putrefaction and high blood-pressure, meat once a day is better than no meat for a patient with chronic interstitial nephritis. Such a patient may very well have a vegetable or milk day, as the diabetic has a greens day, once a week.

8. A high blood-pressure may be more or less lowered by excluding meat from the diet.

9. In all acute rheumatic conditions the patient is better off without meat, because it produces more systemic acidity and therefore diminishes the alkaline salts of the blood.

10. Gout is neither prevented nor cured by interdicting the use of meat, but it is improved (and uric acid deposits are more or less prevented) by withholding all foods rich in nucleoproteins, such as sweetbread, liver, shad-roe, etc. Also, it has been shown that alcohol taken with a meal containing meat results in the formation or excretion of more than the normal amount of uric acid during the final metabolism of the meat.

11. The cure of tuberculosis is best aided in this climate by a moderate daily allotment of meat.

12. Because meat stimulates the thyroid, it should be withheld in all cases of thyroid hypersecretion. It should be given in thyroid hyposecretion.

13. Most neurasthenics need meat.

14. When kidney function is impaired large amounts of meat-extracts and beef-teas or broths should be withheld, as they, more readily than meat, cause retention of waste products.

15. Although meat broths, whether home-made or artificially prepared, offer little if any real nutrition,

they may stimulate not only the circulation and the nervous system, but also nutrition, and may, by stimulating the digestive secretions, aid the digestion of other foods. Hence, the kidneys being sufficient, while we should not depend on beef-tea as a food or real nutriment, it may be of marked benefit in serious illness. Also, a cup of bouillon or consommé before dinner may have a physiologic use.

DIGESTANTS

The value of gastro-intestinal digestants has long been misunderstood, and such preparations have consequently been much misused. Acids and pancreatin, soda and pepsin, and pancreatin and pepsin have been so hopelessly mixed in prescriptions and in the patient's stomach that the only saving factor has been in their harmlessness.

Those who understand the subject of digestion have realized that it is comparatively futile to expect aid in intestinal digestion from pancreatic extract administered by way of the stomach. Even if it were temporarily protected by an alkali, as sodium bicarbonate, its activity would be more or less impeded by the hydrochloric acid of the stomach before entering the alkaline intestine, though its amylolytic ferment might act in the stomach, protected by the alkali, until free hydrochloric acid was present or a certain amount of acid peptones had formed.

For predigesting such protein foods as milk, pancreatin and a sufficient amount of alkali as combined in various powders or liquids on the market may be of value, but in the stomach pancreatin is practically useless. Pepsin is rarely needed, and generally is of value only when combined with dilute hydrochloric acid. If pepsin is indicated, the dose generally given is small when the size of a meal is considered. Also, pepsin is rarely absent from the stomach. Dilute hydrochloric acid is a valuable aid in correcting the imperfect digestion in the stomach which frequently occurs. It should be remembered that when given directly after meals this acid will inhibit the starch digestion of the ptyalin, though this may often be negligible.

Because the value and action of these digestants are misunderstood, a report of experiments made in an effort to clarify this subject is welcome, and one is offered by J. H. Long and G. W. Muhleman[1] of Chicago. They state that ptyalin is so sensitive to acid that even traces of hydrochloric acid will render it inert. Consequently, any acid administered after a meal would inhibit salivary starch digestion.

They also state that the pancreatin marketed is "often not much more than fat-free ground pancreas," while, theoretically, pancreatin should be a precipitated and concentrated extract of the pancreas. Such a preparation would, of course, be much more expensive than the substance now sold as pancreatin. Long and Muhleman find that in fat-splitting power, these pancreatic powders are very deficient. They contain little of the lipase enzyme. Therefore they are valuable only as a digestant of protein and of starch.

The experiments also show that very small amounts of acid destroy the amylopsin of pancreatin; therefore, its activity is destroyed when pancreatin is administered by way of the stomach. Pepsin also seems to delay or interfere with pancreatic starch conversion. It has not been demonstrated that pepsin alone can interfere with trypsin action; that is, with the proteolytic power of pancreatin. Moderate amounts of sodium carbonate (which perhaps is true also of sodium bicarbonate, though it is not stated) do not interfere with the action of trypsin.

These experiments seem to show that hydrochloric acid in a 0.2 per cent. solution — the normal strength of this acid in the stomach — neither destroys nor essentially retards the action of trypsin when the solution has been neutralized by an alkali. It is shown, however, that the proteolytic ferment of trypsin when subjected to the action of pepsin is partially destroyed and that it may become inert if subjected to the action of acid and pepsin during the length of time that is required in ordinary digestion. Therefore, no justification seems to exist for administering pancreatin either for its proteolytic action in the intestine or for its amylolytic action in the stomach.

These investigators examined a number of pancreatins purchased on the American market. Although these may be obtained from many firms the sources of supply are few. Some of these products showed, under proper conditions, a fair amount of amylolytic action, but their tryptic power was usually low. In the strength required by the United States Pharmacopeia, pancreatin is of but little value, except in predigesting certain articles of food. It also commonly loses its digestive power with age. Certainly, old preparations of pancreatin should not be used even for predigesting purposes.

1. Long, J. H., and Muhleman, G. W.: The Mutual Action of Certain Digestive Ferments, Arch. Int. Med., February, 1914, p. 314.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

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W. A. PUCKNER, SECRETARY.

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NORMAL HORSE SERUM.—(See N. N. R. 1914, p. 270.)

H. M. Alexander & Co., Marietta, Pa.

Normal Horse Serum with Chloroform as a Preservative.—Marketed in vials, each containing 50 Cc. The date of bleeding is stated on the bottle.

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The Greatest Waste.—In any business, intelligent management attacks and eliminates waste. The government is a gigantic business enterprise, with an implied purpose of far greater import than dividends in money or stocks. Sickness is waste. The death-rate in the cities of this country is 15 per thousand; in rural districts 10 per thousand. This can be cut in half.—Dowling, in *Bull. Texas State Board of Health.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 2, 1914

RESEARCH AND EXPERIMENT IN MEDICINE

The contribution of large and steadily increasing amounts of money from the public funds for the purposes of agricultural research, experiment, and demonstration has brought the authorities entrusted with the expenditure of these funds face to face with the problems of their administration. The nation has a right to expect that the liberal means placed in the hands of scientific men shall be devoted to the ends intended. Science and scientific men have been singularly free from the suspicion of improper practices such as wilful misuse or intentional diversion of trust funds from their proper object; and probably no group in the community better represents the highest type of unselfish devotion to its own ideals. Unfortunately, it happens sometimes that even well-intentioned persons entrusted with the guidance of research and experiment are entirely unfitted by temperament and unprepared by training to appreciate the requirements and limitations of such work. These persons, in assuming leadership, not infrequently violate the spirit of investigation and are responsible for waste of energy and unjustified expenditure of valuable resources.

A review of the situation with regard to agriculture,[1] which is in a sense the pet scientific protégé of the national government, discloses many features that find their counterpart in the field of the medical sciences and therefore are of interest to physicians. The scientific world now has a right to expect of men assigned to research a just conception of the standards and the qualities of such activity. The terminology at present used to distinguish between research and experiment means little and is loosely used. Much difference of opinion and even some confusion may exist as to the originality with which the data are used in a given piece of work and the extent to which it embodies the essential characteristic of research. The boundaries will be continually shifting, because what is original research at one stage may cease to be such at another, and may even pass into the realm of demonstrated fact.

The *Experiment Station Record* well remarks that science, whether for itself or as applied to any particular class of phenomena, is developed through research. Observation and experiment teach facts; and in all science investigation consists in passing from the fact to the law, and in discovering the facts which may lead to the formulation of a law or conclusion. Facts and laws are not artificial or accidental —and are not made by the scientist. Man's only originality in connection with them is their discovery. Facts differ widely in their importance. This is a truth which those who claim to have an interest in medical research all too frequently fail to appreciate. It requires critical study to be sure that what we determine is actually a permanent fact and not merely the accidental result of a particular combination of circumstances.

Many of the so-called clinical investigators seem to overlook the necessity of adopting as simple conditions of experiment as possible and of controlling the limiting factors to the utmost degree. The attempt to make an experiment, conceived in haste, answer too many questions, with a result that is fatal to the whole undertaking, is perhaps one of the commonest errors of the overambitious worker. In medicine one must deal with natural phenomena of inevitable complexity and endless variety. Decisive results and safe interpretations are correspondingly difficult to secure.

Again, isolated facts in medicine, as in agriculture, do not always have the constructive value that such facts may have in pure science, because the investigator is skeptical of them knowing the liability to faulty observation. Yet some seem to believe that the mere cataloguing of isolated facts, without deducing their causes, consequences or relations, constitutes research. Accordingly we read clinical "researches" filled with the enumeration of blood-counts, temperature records, pulse-rates, urinary analyses, etc.—facts of themselves having no scope or significance, and representing only routine activity. In true research, observation and experiment should not be allowed to run wild. Merely to observe is not sufficient. "Science is built up with facts as a house is with stones. But a collection of facts is no more science than a heap of stones is a house." How much valuable space could be saved in our journals if it were more widely recognized by those who fill the pages that experiments, if they form a part of real research, are not made at random or by chance or to see what will happen, but advisedly, as a means to an end, and as the outgrowth of the working plan or of ideas suggested by previous experiments.

An acceptance of the principles of hypothesis, experiment, and generalization as fundamental guides in research promptly excludes from the category of

1. See editorial notes: Research, Experiment and Demonstration; The Essentials of Research; Lines of Demarcation between Experiment and Demonstration, Experiment Station Rec., 1914, xxix, 701.

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investigators a goodly number of medical workers who are conducting what we may designate as "experiments" in distinction from research. Their efforts are by no means in vain; but we must learn to distinguish verification experiments, comparative trials, attempts to determine advantageous methods of practice or relative values—results that are of more or less temporary usefulness—from those excursions into the unknown that truly deserve the designation of research. A large share of ordinary clinical study involves the attempt to get a relatively quick result, without resorting to the precision and detail of thorough-going investigation. Such procedures as, for example, the correlation of blood-pressure with certain clinical conditions or the observation of the comparative results of different ways of administering a drug, have been of great value in developing practical methods in diagnosis and therapy. Experimental work of this sort properly constitutes a large share of the effort of clinical men; but like research, it should be progressive, recognizing that advancement depends on building on the things that have become known. In the field of clinical medicine almost endless numbers of combinations of experiences may arise. Most of them give few new results of value. It is the duty of the laboratory worker and the clinician alike to realize that after a certain number of experiments have been made on a given condition one must consider whether or not it is worth while to continue them.

Experimental work at present is expensive. The individual using public funds and private endowments or directing their use, in either research or less pretentious experiment, should be careful to conserve the interests at stake and not to extend his attempts beyond what is actually needed. Our great research foundations have begun to realize this far better than have the hospital laboratories and university clinics. We must now regard certain facts as practically established, in so far as it is possible to establish them by the methods employed, and direct our efforts to other lines of inquiry, rather than "move in circles."

IRRATIONAL SCHOOLCHILDREN

It is not often realized that irrational individuals who reach insane asylums in early adult life have probably shown during their school years indications that they were either distinctly lacking in intelligence or were of perverted minds. This constitutes one of the most important problems of modern school life. Those familiar with educational systems know that usually most of the difficulty in managing a class, particularly of boys, is caused by one or two pupils who are not amenable to ordinary discipline. Commonly these pupils are a little older than the average of the class because they have been left behind in several examinations, and their added age and superiority of strength gives them an unfortunate influence over other pupils. Often neither teachers nor principals can govern them. They have all the cunning of the insane and sometimes boast that no one can manage them and no one dare touch them. In fact, the mothers of many such boys admit that they have always been uncontrollable.

In some places, particularly the larger cities, special schools are provided for these deficient children, but very often this class of pupils either keep out of such schools, or they are deliberately kept out because they exert an unfortunate influence on other children of low-grade intelligence, often take advantage of them and cruelly abuse them. One or two unmanageable children who consume the teacher's energy without purpose and set a bad example to the other pupils may create lamentable disciplinary conditions in the whole school; and many schools in this country are being conducted under such conditions. Many schoolteachers can tell of being frightened or even of being threatened with weapons by such children; not a few have preferred to have nothing to do with such pupils and have allowed them to go their own way rather than suffer the worry or run the risks involved in the attempt to control or discipline such pupils. Yet the public has not been aroused to the dangers involved in the failure to recognize and segregate deficient children, as adult lunatics are segregated, for the sake of society.

This subject has been placed in the limelight by the murder of a schoolteacher in western New York. She had, as many teachers have, special sympathy with this class of pupil and was going to visit the father of one such in order to secure a mutual understanding between home and school. The conditions of the murder seem to make it clear that it was more of an irrational than a criminal deed.

The solution of this problem requires expert medical assistance. Indeed, in some places such expert aid is already used in the care of these pupils. A crime such as that recently reported should make plain the imperative necessity of dealing adequately with this problem wherever it exists.

DISEASE DANGERS OF MEXICAN INVASION

The possibility of war with Mexico has been before our people for some time; if a general war occurs it means invasion of Mexican territory. The question naturally arises, What are the disease dangers which will confront American soldiers in Mexico? It has long since passed into a truism that in war, disease kills more than bullets. Will this prove true in a Mexican war? The increased knowledge of preventive medicine since the Spanish-American War has encouraged the belief that the mortality from disease

will be materially lessened. To what extent is this belief justified, and what are the diseases from which our troops may suffer in a tropical country and from which they should be protected?

Aside from the ordinary diseases which might prevail among any body of two or three hundred thousand men, there are certain diseases to which soldiers in camp and in the field are particularly exposed. These are especially small-pox, typhoid fever and dysentery. Small-pox may be disregarded, as any troops sent into Mexico will be immune from this disease through vaccination. Typhoid fever, in the past, has been the awful scourge of military camps. The appalling experience of the Spanish-American War has not been forgotten by our people; the record of twenty thousand cases of typhoid in the Army in six months produced an impression which can never be obliterated. But since then progress in preventive medicine has been made, and vaccination against typhoid is a result. Antityphoid inoculation has been subject to rigorous tests on a large scale in the Army during the past two years, with the result that in 1913, out of ninety thousand men at home and abroad, there was only a single case of typhoid fever among the inoculated, a record that can well be regarded as a triumph for preventive medicine. It is believed that the army surgeon now has a weapon against typhoid that will make the next war unique in this regard. Every officer and man now in the United States Army and Navy is practically safe against this disease, and each recruit will be inoculated at the time he is sworn into the service. The next campaign in which the United States Army will participate will be a practical test of typhoid prophylaxis on a large scale. That it will prove the value of inoculation and will relieve warfare of one of its most horrible accompaniments there is little doubt.

The dysenteries can be divided into those due to bacterial invasion and those caused by ptomains in foods. While the water and food of the soldiers will be more carefully guarded than ever before, a certain amount of intestinal disorder will be inevitable. It can safely be predicted, however, that the nation will be spared a repetition of the "embalmed-beef" scandals of 1898. The work of the general staff of the Army, the development of departmental officers of high efficiency and the enormous amount of publicity on pure food that has taken place in the last decade, ought to insure the American soldiers a wholesome food-supply. After the experience and warning of the past, the American people will hold to a strict accountability any one responsible for supplying the Army with food materials which are not in every way up to the standard.

Of the diseases peculiar to tropical and semicivilized countries, yellow fever, malaria, bubonic plague, cholera and typhus must be considered. The brilliant work of the last fifteen years in demonstrating the transmission of malaria and yellow fever by the mosquito has put our Army and Navy surgeons and sanitarians in possession of all the knowledge needed to control these diseases. The convincing demonstration of the practicability of their control given by General Gorgas in the Canal Zone has proved that malaria and yellow fever can be controlled completely in settled communities. Where men are living in fixed habitations which can be screened and where all possible breeding-places of mosquitoes for a necessary distance can be destroyed, the complete eradication of these two diseases is possible. It remains to be seen, however, what methods can be developed for preventing mosquito infection among soldiers in the field. Mosquito-nets can, of course, be carried, and patients in the field and hospitals can be protected as well as troops in barracks or permanent quarters. But how about troops in the field, scouting parties, pickets and outposts? Undoubtedly American ingenuity will devise methods to meet the needs, and the dangers of these two diseases will be greatly diminished, although occasional cases may be unavoidable. Epidemics, however, will be practically impossible.

Cholera, being borne through water, milk, flies or human carriers, can be prevented only through cleanliness and by maintaining the purity of water-supplies. It is not to-day a particularly dangerous possibility, as it can enter Mexico only by way of the seaports, most of which, in case of a campaign, would soon be in the hands of the Navy and under quarantine regulations. Regarding typhus fever, it is a strange coincidence that the work of Ricketts, by which he demonstrated, at the loss of his own life, that the body-louse is the carrier of this disease, was done at Mexico City, where he went to carry on his investigations on account of the prevalence of typhus among the lower-class Mexicans. This disease, which in past centuries caused enormous loss of life in camps and on shipboard, is limited in its danger and can easily be prevented by avoiding dirty dwellings and contact with dirty individuals. There is as yet no known method of prevention except the avoidance of infection. It is probable that among any large number of soldiers in Mexico, a few cases of this disease will develop.

Bubonic plague is endemic in many of the near-by South American ports. It would probably be a constant danger in the Mexican seaports. Fortunately, it would be confined largely to the seaports and large towns. An army in the field, living in tents on the bare ground, would be practically safe from it. Probably one of the first measures inaugurated by our medical officers on taking possession of a Mexican seaport would be a campaign of rat extermination, as this animal has been shown to be responsible for plague propagation.

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These are the principal dangers to American soldiers in Mexico. Our equipment for the control of these diseases is not yet entirely complete; but the enormous increase in scientific knowledge and the equally marked development of practical methods for fighting diseases in the last fifteen years justify the assurance to the American people that the horrors of epidemic disease in past wars will be impossible in our next military experience. The United States possesses to-day in the medical officers of the Army, Navy and Public Health Service a body of trained and expert sanitarians equal to any in the world. Whatever human knowledge and skill can do to protect our soldiers from diseases will be done, and it can safely be said that any army that we may send into foreign territory will be better protected against disease than has ever before been the case in our history.

TYPHOID DISAPPEARS IN THE ARMY

During 1913 typhoid fever has practically been eliminated from the United States Army. What this means can be appreciated only by those who know the varied conditions under which these men live. About ninety thousand soldiers are scattered over the Philippine Islands, Oahu in the Hawaiian group, Northern China, Panama, Alaska and the United States proper. About twelve thousand have been living under canvas in camps in Texas since February, 1913. Five thousand are native Filipinos living in the Islands.

In another column[1] Major Russell of the Army Medical Corps gives an account of the disappearance of typhoid in the Army. One case of typhoid fever in an inoculated soldier was diagnosed in the battalion at Tientsin, China. Two cases in this country occurred in recruits of four and five days' service, respectively, who had not been inoculated at the time they were taken sick. All usual laboratory methods are used in determining the disease, and all cases of continued fever are so examined.

The United States Census for 1900 gives the average typhoid death-rate as 46.5 per hundred thousand inhabitants. Rosenau states that in this country "there are comparatively few communities of 1,000 inhabitants or more, which, during any period of twelve consecutive months within the last decade, have been entirely free from typhoid fever. In 1908, the death-toll from typhoid fever was no less than 35,000 in the United States. In other words, one person in 200 contracted typhoid fever that year." This would mean at the 1908 rate, 450 cases in the Army at its present strength.

The disappearance of the disease is due to inoculation of all recruits as they enter the service. The general sanitary condition of the posts for the past few years is maintained at the same level, but it must be recalled that soldiers on entering the Army by no means lose touch with civil life. They participate in all features of civilian life, just as any other travelers or visitors, and so are exposed to the same chances of infection that civilians incur. The fact that a population of ninety thousand at a most susceptible age has practically no typhoid can be accounted for only by the immunity conferred by the prophylactic inoculation. The extension of this measure to certain phases of civil life is definitely indicated for adolescents who have not had the fever, in the presence of an epidemic, or for those leaving their homes for travel or for life in the country. Is there no value in this procedure to railroads and other industrial concerns that employ armies of skilled labor, as well as to the individual on farms and railroads whose family is dependent on his manual labor for livelihood? The way has been shown for reducing greatly the three hundred thousand cases per annum in this country by a procedure causing less inconvenience than vaccination.

1. Russell, Frederick F.: Antityphoid Vaccination in the Army During 1913, p. 1371, this issue.

ALBUMOSURIA

When proteoses (albumoses) find their way directly into the blood-stream they behave like foreign substances and are promptly excreted, in good measure by the kidneys. This fact, long since ascertained through a large number of trustworthy experiments, has in the past furnished the basis for the interpretation of the excretion of proteoses in the various instances which are classed clinically under the term "albumosuria." The urinary elimination of proteoses (a general term preferable to the more specific name "albumoses") might, therefore, be expected whenever any considerable autolysis of pathologic tissue or exudate with absorption of its products of self-digestion is taking place. Consonant with this was the asserted finding of "albumosuria" in all cases of suppuration, in the resolution of pneumonia, involution of the puerperal uterus, carcinoma and other malignant growths, febrile conditions with tissue destruction, severe liver affections, absorption of simple and inflammatory exudates, etc.

A decade or two ago, when the early chemical researches on the proteoses as primary products of digestion were at their height, the subject of albumosuria was prominently considered in medical literature. The subsequent careful consideration and critical revision of the work reported at that period has led to the conclusion that the appearance of proteoses in the urine is in no sense a constant symptom of any circumscribed group of pathologic manifestations; nor do the cruder methods of analysis then in use and the lack of appreciation of the numerous sources of error

permit the earlier records to be regarded as always trustworthy. After a lapse of a number of years, during which the clinical occurrence of albumosuria has received scant attention, the question of its incidence and possible significance is again being considered. The methods of the past have been fortified not only by searching for what might be called a spontaneous excretion of proteoses, but also by testing individual tolerance to large quantities of preformed proteoses administered in a single dose by mouth to a fasting stomach. The amount thus given has been about 35 gm. of a commercial product introduced in the form of a palatable soup. The investigations of Dr. Leo Pollak in Vienna have given a new significance to what may be called alimentary or enterogenous albumosuria diagnosticated by the means here described.[1] It was this type of albumosuria, associated with the abnormal penetration of undigested proteoses through the alimentary barrier, which was long ago supposed to be characteristic of conditions involving pathologic alterations of the gastro-intestinal mucosa. This might occur, for example, in carcinoma of the intestine or in typhoid fever attended with intestinal lesions. Pollak has shown, however, that the detection of alimentary albumosuria cannot by any means always be interpreted as diagnostic of ulcerative changes in the enteric tract; for in some cases the real cause of the reappearance of the proteose lies in diseased kidneys, as indicated by the simultaneous employment of one of the current tests for renal function. It is therefore permissible to speak of renal albumosuria. This is rarely observed to occur spontaneously, that is, as the result of the immediate disintegration of the kidneys.

In addition to the alimentary and renal types of albumosuria, Pollak maintains also the possibility of a histogenic form, the most conspicuous examples of which are observed in pneumonia. Like others already mentioned, these cases may owe the production of the proteose to a parenteral disintegration of proteins, for the possibility of which the now well-known appearance of blood or tissue proteolytic enzymes may be made responsible. The study of the significance of albumosuria has at length received a new impetus.

Current Comment

PLASMODIUM TENUE, A NEW MALARIAL PARASITE OF MAN

Sir Ronald Ross has just communicated to the Royal Society of London the discovery, by Dr. J. W. W. Stephens, professor of tropical medicine at the University of Liverpool, of what he believes to be a hitherto undescribed malarial parasite of man.[2] It was first noticed in a blood-slide from a native child in the Central Provinces of India. A striking peculiarity of the Indian parasite is its decided irregularity of form as compared with the regular, almost monotonous contour of the "rings" of the malignant tertian parasite (*Plasmodium falciparum*). The new species, to which the name *Plasmodium tenue* has been given, is extremely ameboid, judging from the stained specimens. Thin processes often extend across the cell or occur as long tails to more or less ring-shaped bodies. There may be several of these processes, and they may give the parasite most fantastic, irregular, web-like shapes. The cytoplasm is very scanty. The nuclear chromatin is out of proportion to the volume of the parasite; and the abundance of the chromatin masses, as well as the marked irregularity in their distribution, seems to be characteristic of the parasite. Its difference from the malignant tertian parasite has been noted above. From the simple tertian parasite it is said to be distinguished by its smaller bulk, more delicate ameboid processes and the arrangement of the chromatin. Typical rings are absent or exceedingly rare. Lastly, its ameboid activity and its tenuity easily differentiate the new species from the quartan parasite. The distinguishing characteristics thus far announced are all of a morphologic nature.

THE GOVERNMENT MEDICAL SERVICES READY

With the possibility of a foreign campaign before our Army, what is the present condition of preparedness of the Army medical service, especially as compared with its condition at the outbreak of the Spanish-American War in 1898? The contrast gives cause for gratification. In the last fifteen years the Army has been practically reorganized. The development of the general staff and the training of experts for various duties have affected the medical department as well as the other branches of service. The enormous increase in scientific knowledge of disease and its prevention has been utilized by the medical officers. Our Army medical corps is to-day a body of trained military sanitarians unsurpassed in any country. In experience, organization, equipment and training, there is no comparison between the present situation and that in 1898. Experience has been gained in the campaigns in Cuba and the Philippines, in the military expeditions in China and Cuba, and in the maneuver camps in 1911 and 1913, so that the Army to-day possesses a corps of specialists trained in camp sanitation. For over a year, military camps have been maintained on the Texas border, containing from ten to twelve thousand men in a well-nigh perfect state of health. The material equipment of the department is incomparably better than it was fifteen years ago. The present system of field hospital organization was almost unknown in 1898. The organization of mobile sanitary units, namely, the ambulance company and the field hospital, will prove a great advantage. While only four field hospitals are actually in existence, on account of Congressional parsimony, the medical department has on hand ample supplies for a com-

1. Pollak, L.: Beiträge zur Klinik der Albumosurie (Renale Albumosurie), Ztschr. f. d. ges. exper. Med., 1914, ii, 314.
2. Stephens, J. W. W.: A New Malarial Parasite of Man, Proc. Roy. Soc. London (B), 1914, lxxxvii, 375.

plete system of field hospitals for three hundred thousand men. These supplies are now in storage, packed for shipment and ready to be put on trains or shipboard at a moment's notice. By way of contrast, at the breaking out of the Spanish-American War, the War Department telegraphed the governors of the various states that it would be necessary for each state to send with its troops sufficient medical supplies to last for six weeks, as the government was unable to furnish them. In a word, the medical department of the Army — and the same may be said of the Navy — has shared largely in the general progress which has been made in the last fifteen years. The present medical and hospital corps are as effectually organized, trained and equipped to fight disease as is the rest of the Army to fight the enemy. Complete prevention of disease among large bodies of men under the unavoidable conditions of military life in actual warfare is impossible. The maintenance of sanitary camps and well-equipped and efficient hospitals, as well as prevention of all avoidable diseases among our troops, can be reasonably expected.

THE MEDICAL RESERVE CORPS

While the Medical Reserve Corps was created for a broader purpose than that of having available a list of trained men on whom to call in time of war, at the same time this was one of the important reasons for its organization. There are over twelve hundred officers on the Medical Reserve Corps (inactive list), and those who are willing to serve will undoubtedly be sufficient for any situation that may develop at the present time or in the near future. The Surgeon-General of the Army has sent a circular to each of the officers of the Corps, in which he submits five questions, to which the officers are asked to answer "yes" or "no." The questions are:

1. Are you ready to accept active duty in your home city or its immediate vicinity should occasion require?
2. Are you ready to accept active duty at camps of mobilization, where recruits will be examined?
3. Are you ready to accept active duty in Army hospitals in the United States or elsewhere?
4. Are you ready to accept active duty with troops in the field?
5. How soon after receiving notice that your services are desired can you leave your home?

It will be noticed that an opportunity to do other effective work is here given those who, while willing to do their part, for some reason or other are not able to go to the front. Many of the officers are men who have organizing ability, who have been connected with hospitals, and who, for this reason, would be of great assistance in administrative work. Some now belonging to the Medical Reserve Corps are men beyond the age-limit for entering as volunteer surgeons for military service or, in fact, for active work in the field. In time of war, however, there is much to be done besides following the troops: recruits must be examined, hospitals equipped, hospital supplies of all sorts selected, inspected, purchased and distributed, base hospitals maintained, and wounded and incapacitated men transported. All of these duties can be performed by men who, though they have not had actual military training or experience, are able to relieve the regular military officers whose services can be utilized where they will be most valuable.

THE FRIEDMANN REMEDY AGAIN

When Friedmann came to this country to exploit his "cure" for consumption, the question was raised: Why does he not remain in his own country to prove or disprove, by careful investigation, whether his remedy has value? For a long time, no unbiased investigation of the Friedmann treatment had been, or could have been, made in Germany, for the product was not available to German physicians until after gullible America had been "worked" to the limit. After Friedmann returned to Germany, he arranged to sell the remedy to German physicians, and we are now beginning to receive the results of its unbiased use in the land of its origin. In our Berlin Letter[1] this week an abstract is given of several recent German articles on the Friedmann remedy. These reports appear to be uniformly unfavorable. They add to the testimony already given in this country that Friedmann's remedy is not only inefficient but also may be dangerous. The investigations of Dr. Brauer of Hamburg are especially noteworthy, as they were made under circumstances that might have been expected to be highly favorable to the remedy, the majority of the injections having been made by Friedmann himself. Moreover, Brauer and his assistants attended the Friedmann Institute to learn the exact technic. The reports add emphasis to the results reported by Professor Rabinowitsch, namely, that the material is likely to be contaminated, sometimes with virulent bacteria, and the remedy itself may prove injurious, if not actually fatal. More than seven months ago, THE JOURNAL expressed its opinion of the Friedmann remedy and the method of exploitation in this country in these words: "Once more it should be stated that the so-called Friedmann cure for tuberculosis is utterly discredited. All reliable reports regarding the treatment of patients by Friedmann's method seem to show either that it is actually injurious or else that it is less efficient than other well-known and less dangerous means of treatment."

A BRITISH OPINION OF AMERICAN PHYSICIANS

During the early part of this year there appeared in various London publications advertisements of a popular encyclopedia containing signed articles by leaders in the medical profession.[2] This encyclopedia, immediately on its publication, was advertised with all the accompaniments of modern publicity methods; namely, full-page newspaper advertising, "sandwich-men," etc., the use of the names of the medical contributors forming a conspicuous portion of the advertising. The

1. Page 1415, this issue.
2. London Letter, p. 1414, this issue.

physicians involved at once wrote letters to various medical and lay publications declaring that the use of their names was entirely unauthorized and disavowing any connection with the encyclopedia beyond the reading of a few proof-sheets at the request of the editor. The encyclopedia is of that type familiar in this country as a "family guide." It boasts that it contains two thousand prescriptions for the use of the public. Apropos of this, the *Medical Press and Circular*[1] remarks that "there could hardly be anything more fraught with danger to himself and his friends than the misguided individual who reads up a medical book and thinks he is qualified to treat maladies of various kinds." This type of person was once cautioned to be careful lest he die of a misprint. So much for the encyclopedia. The British journal in question, however, proceeds under the title of "Americanizing the Profession" to criticize "the fever of self-advertisement which appears to have invaded the American profession from tip to toe." It says: "In America, frank advertising by medical men is the general rule, and the most successful man is often he who can best attract the reporters to his doorstep. It almost looks as if the Americanizing of a certain section of our newspapers were to be followed by the Americanizing of our medical profession." It would be interesting to know where the *Medical Press and Circular* secured the information on which to base the amazing statement that in America frank advertising by medical men is the general rule. Such sweeping general statements, without any knowledge of facts to support them, are not often found in America in reputable scientific journals. We expect to find them only in "yellow journals." The *Medical Press and Circular* would do well to secure an American correspondent whose statements can be relied on, and to avoid the methods of the yellow journal in discussing sensationalism and its results. We must refer the *Medical Press and Circular* to the statements made in a previous editorial: "An honorable physician could not conscientiously advertise for personal business, for the same reason that the honorable minister and lawyer would not advertise. A professional man has no commodity to sell; his only assets are his scientific knowledge and his personal ability; and he who claims to possess greater knowledge or greater skill than his professional associates—whether physicians, preachers or lawyers—is an egotist, or worse, and forfeits the respect of both his professional brethren and his fellow citizens."

1. The Family Encyclopaedia, Med. Press and Circular, 1913, xcvii, 271.

A SKIN REACTION INDICATIVE OF TYPHOID IMMUNITY

Gay and Force[2] have found that a preparation of the typhoid bacillus made in the same way as Koch's old tuberculin when applied to the skin by the von Pirquet method produces a clean-cut reaction in 95 per cent. of persons who have had typhoid fever. In two instances the attacks occurred forty-one and thirty-three years, respectively, before the test. The reaction failed to occur in 85 per cent. of persons without any history of typhoid, the persons reacting positively probably having had mild and unrecognized attacks. These investigators found further that of fifteen persons vaccinated by the United States Army method from four and three-quarters years to eight months previously, nine showed the reaction, and that twenty-five persons inoculated with a sensitized vaccine from one to eight months previously all reacted positively. The preparation of typhoid bacilli used in these tests consisted of a five-day culture in 5 per cent. glycerin-broth evaporated over acetone to one-tenth its original volume. In view of its simplicity, this test may prove to have practical value in determining whether persons who have had typhoid or who have been inoculated against typhoid are protected against the disease. Eventually it may be concluded that, in the inoculated, a negative skin-test is an indication for reinoculation. It is also possible that the test may prove of service in the study of the efficacy of different methods of protective inoculation. Extended observations will be necessary before the full significance of the reaction can be ascertained.

2. Gay, Frederick P., and Force, John N.: A Skin Reaction Indicative of Immunity against Typhoid Fever, Arch. Int. Med., March, 1914, p. 471.

COLD WEATHER AS A FACTOR IN THE SPREADING OF DIPHTHERIA

By exposing plates of suitable mediums before the mouths of diphtheria patients while coughing or talking and then determining the number of colonies of diphtheria bacilli that develop on the plates, an idea may be obtained as to the extent to which bacilli are disseminated under these circumstances. In experiments of this kind Teague[1] found that most of the patients observed while coughing and talking emitted diphtheric bacilli in what would seem to be small numbers. It has been observed in experiments on the dissemination of prodigiosus bacilli in sputum droplets (the bacilli, which are harmless, are introduced into mouth and throat on swabs or in gargles) that low temperature markedly prolongs the life of the expelled bacilli, which, according to Hutchison, may be carried over comparatively considerable distances up to 600 meters (almost 2,000 feet). As the diphtheric bacillus is more resistant to drying than the prodigiosus bacillus, it is quite probable that the danger of droplet infection is greater in inadequately heated rooms than in rooms properly warmed, and that we have here an additional factor to account for the increased prevalence of diphtheria in the colder season. In this connection it may be recalled that the effect of low temperature in prolonging the life of bacilli in expelled sputum droplets is regarded as having played an important part in the epidemic of pneumonic plague in Manchuria in the winter of 1910-1911.

1. Teague: Jour. Infect. Dis., 1913, xii, 398.

Life.—Life is not mere living but the enjoyment of health. —Martial.

Medical News

ALABAMA

Hospital Annex.—An annex to the Hillman Hospital, Birmingham, has been completed and other improvements to the institution have been made.

Meningitis at Bessemer.—Twenty-seven cases of meningitis were reported from Bessemer under date of April 15. Bessemer is a town of 20,000 and the disease is not regarded as epidemic.

Health Bulletins.—Dr. R. M. Cunningham, city health officer of Birmingham, announces that he intends to issue a series of weekly health talks, to show the people what they must do and must not do in order to keep down disease and pestilence.

ARKANSAS

New Officers.—Tenth Consular District Medical Society at Fort Smith, March 17: president, Dr. James A. Fergus, Rogers; secretary, Dr. Arthur F. Hoge, Fort Smith.

Hospital Service.—The St. Louis, Iron Mountain and Southern Railway has arranged to open an emergency hospital at Gurdon for the use of employees of the road.

Hospital Notes.—At the annual meeting of the Sparks Memorial Hospital Association, Fort Smith, Drs. George W. Moss, W. H. Johnson and T. J. Wright were elected directors. The erection of a home for nurses and families of patients at a cost of $10,000 was discussed.

CALIFORNIA

State Society Meeting.—The forty-fourth annual meeting of the Medical Society of the State of California was held in Santa Barbara, April 14-16, under the presidency of Dr. Fitch E. Mattison, Pasadena, and the following officers were elected: president, Dr. Harry M. Sherman, San Francisco; vice-presidents, Drs. George A. Hare, Fresno, and Rexwald Brown, Santa Barbara; secretary, Dr. Phillip Mills Jones, San Francisco (reelected). San Francisco was selected as the meeting place for 1915. Dr. Robert A. Peers, Colfax, president of the State Association for the Prevention and Cure of Tuberculosis, presented a draft of a proposed legislative bill to appropriate $1,000,000 for the crusade against tuberculosis, $50,000 of which was to be available in July, 1915; $450,000 in July, 1916, and $500,000 in July, 1917. The association endorsed a movement for the establishment of a federal hospital in the Southwest for the study and treatment of tuberculosis.

COLORADO

Personal.—Dr. Walter H. Wood, Greeley, fell 20 feet down an elevator shaft in the Greeley Hospital, April 12, fracturing his left arm and injuring his right arm and hip. ——Dr. Edward F. Lake, Denver, was operated on in Baltimore for carcinoma of the tongue, April 9.

New Clinic at Denver.—The new municipal clinic at Denver opened last month has been meeting with great success, and has handled more than one hundred patients a day. Dr. Asa Z. Hall, secretary and supervisor of the institution, is assisted in his work by the following staff: general medicine, Drs. Lorenz W. Frank and Asa Z. Hall; gynecology and surgery, Drs. Henry R. McGraw and Howard A. McKnight; laboratory, Dr. Benjamin H. Matthews and Paul S. Nice; pediatrics, Dr. George M. Blickendorfer; tuberculosis and diseases of the nose and throat, Drs. Orville D. Wescott, Louis H. Schultz and Johanna Gelien; and consulting staff, Drs. James M. Perkins and Oscar Hayes.

GEORGIA

Addition to Grady Hospital.—The medical board of Grady Hospital has adopted resolutions asking an additional new building to be used as a municipal hospital, and to contain accommodations for pay patients. The question of an appropriation of $750,000 for the establishment of this hospital is to be voted on by the people of Atlanta.

Medical Society's New Quarters Open.—Medical Hall, the new home of the Georgia Medical Society, Savannah, was opened with formal ceremonies, March 31. The building is located on Drayton Street, overlooking Forsythe Park, and is a four-story brick structure. The first and second floors only, will be used by the society at present. Dr. Thomas J. Charlton, chairman of the house committee, presented the keys of the building to Dr. Justin L. Jackson, president of the society, who formally accepted them, after which Dr. J. Ewing Mears, Philadelphia, an honorary member of the society, spoke on "The Significance of the Construction and Opening of the Medical Hall of This Society."

State Association Meeting.—The sixty-fifth annual meeting of the Medical Association of Georgia was held in Atlanta, April 15-17, under the presidency of Dr. Ralston Lattimore, Savannah. Resolutions were adopted endorsing the public health bill and vital statistics bill to be brought before the legislature at its next session. The following officers were elected: president, Dr. William B. Hardman, Commerce; vice-presidents, Drs. Howard J. Williams, Macon, and Frederick D. Patterson, Cuthbert; secretary-treasurer, Dr. William C. Lyle, Augusta (reelected), and delegate to the American Medical Association, Dr. Edward C. Davis, Atlanta. The association was the guest of the Fulton County Medical Society at a banquet at Hotel Ansley, April 17.

ILLINOIS

Personal.—Dr. Ernest W. Pothoff, Oak Park, sailed for Europe, May 2.——Dr. David C. Harmison, Havana, is reported to be seriously ill at his home.——Dr. John C. Griffith has succeeded Dr. George S. Duntly as local surgeon of the Toledo, Peoria and Western Railroad at Bushnell.

New Officers.—Rock Island County Medical Society at Rock Island, April 14: president, Dr. John W. Seids, Moline; secretary, Dr. William D. Chapman, Silvis.——Hancock County Medical Society at Carthage, April 9: president, Dr. William Blender; secretary, Dr. Samuel M. Parr, both of Carthage.——Gallatin County Medical Society at Equality, April 8: president, Dr. J. W. Bowling; secretary, Dr. A. B. Capel, both of Shawneetown.——Franklin County Medical Society at Benton, April 14: president, Dr. William H. Smith; secretary-treasurer, Dr. Edgar Austin, both of Benton.——Clark County Medical Society at Marshall, April 9: president, Dr. Lyman A. Burnside, West Union; secretary-treasurer, Dr. Levi J. Weir, Marshall.

Chicago

Personal.—Dr. Cassius Clay Rogers has resigned from the faculty of the Chicago College of Medicine and Surgery.——Dr. B. Barker Beeson has sailed for Europe.

Advocates Detention of Tuberculosis Patients.—The forcible detention and treatment of ignorant victims of tuberculosis was advocated at the public conference held April 16 at the City Club, under the auspices of the Chicago Tuberculosis Institute.

Crime Laboratory Opened.—The municipal psychopathologic laboratory of Chicago was opened May 1, on the eleventh floor of the City Hall. Dr. William J. Hickson, Vineland, N. J., is head of the work, and Miss Mary M. Campbell has accepted the position of assistant director.

Mortality and Morbidity Figures for First Quarter.—The total number of deaths from all causes in Chicago during the first quarter of 1914 was 9,756, which is 277 fewer than for the corresponding period of 1913. This gives a per annum rate of 16.5 per 1,000 as against 17.4 for 1913. The figures as compared with those of 1913 show reductions as follows: scarlet fever, 353; diphtheria, 112; measles, 113; pneumonia, 225. The increases are as follows: diarrheal diseases, 107 under 2 years of age; congenital defects and accidents, 91; whooping-cough, 23; tuberculosis, 10. There was an increase of 209 deaths under 1 year of age, but a decrease of 371 between the ages of 1 and 5. Reductions over the period of 1913 in the number of cases of infectious diseases for the quarter were as follows: measles, 7,773; scarlet fever, 3,815; diphtheria, 926; small-pox, 26. Increases were as follows: whooping-cough, 1,423; chicken-pox, 259; mumps, 251; typhoid fever, 51. The above figures are from the Bulletin of the Chicago School of Sanitary Instruction. Attention is called to the fact that for the first time in the history of the city the number of cases of pneumonia reported exceeded the number of deaths from that disease during the quarter, the figures being 2,662 cases reported and 1,831 deaths. This is a gratifying improvement in the reporting of notifiable diseases.

IOWA

State Society Meeting.—The sixty-third annual meeting of the Iowa State Medical Society will be held in Sioux City, May 13-15, under the presidency of Dr. Lee Wallace Dean, Iowa City.

New Sanatorium.—Scott County is erecting a county tuberculosis hospital near Davenport, at a cost of $71,000, which will be ready for occupancy June 1. The building is 138 by 80 feet, the grounds comprise twelve acres, and the institution will accommodate forty patients.

Personal.—Dr. George McC. Middleton has succeeded Dr. William A. Stoeks as city physician of Davenport.——Dr. John L. Klein has been elected health officer of Muscatine. ——Dr. Thomas J. Williams, Hiteman, has gone abroad.—— Dr. Eugene C. McMeel has been appointed postmaster of Delmar.

KANSAS

New Hospital.—Halstead is to have a new three-story, fire-proof hospital, to cost $15,000.

Pellagra in Kansas.—The fourth case of pellagra in Kansas during the past year has been discovered at Atchison. Diagnosis was determined by the physicians of the Atchison County Medical Society. The patient came to Atchison from Winthrop a year ago.

LOUISIANA

Course on Educational Hygiene.—During April a course of lectures on educational hygiene was delivered at the New Orleans Normal School. The first lecture was by Dr. Charles C. Bass, on "Malaria," the second by Dr. Otto Joachim, on "Hygiene of the Ear," the third and fourth by Miss Mary Realey, on "Social Phases of Hygiene," and the fifth by Dr. William W. Butterworth, on "Nutrition and Education."

New Medical Society Organized.—At a meeting at the Hotel Monte-Leone, New Orleans, April 15, the Pan-American Medical and Surgical Organization was organized. The following officers were elected: president, Dr. Stephen W. Stafford, New Orleans; vice-presidents, Drs. Joseph A. Estopinal, Arabi, and Everard W. Mahler, Charles V. Unsworth and C. Grenes Cole, New Orleans; secretary, Dr. Joseph J. Wymer, New Orleans, and treasurer, Dr. William T. Patton, New Orleans.

Conference of State Health Officers.—The State Health Officers of Louisiana held a conference in New Orleans, April 20, pursuant to the call of Dr. Oscar Dowling, president of the State Board of Health. As mayors of cities and towns and presidents of police juries (the community legislative body) in Louisiana are fiscal agents of health appropriations, they were invited. The number in attendance was large, every section of the state being represented. Two phases of local work were emphasized; the application of the law, and practical means of improving local service. Dr. William C. Woodward, health officer of Washington, D. C., and Surg. B. S. Warren, U. S. P. H. S., were present. Dr. Woodward discussed "The Functions of Legislation in the Conservation of Public Health," and Dr. Warren "The Effects of Industrial Conditions in the Protection of Diseases." Dr. Oscar Dowling presided.

Conference on Betterment of Hygiene Among Negroes.—Betterment of negro health was the subject of a conference of Southern Health and Educational Officers, held in New Orleans, April 24. The meeting was called by Dr. Oscar Dowling of the Louisiana State Board of Health. Five states and the District of Columbia sent delegates. Eight of the leading negroes of the South were present. To agree in practical measures for ultimate and immediate betterment was the purpose of the conference. Speakers and visitors were unanimous that the call was timely and that the need for concerted action is imperative. After lengthy discussion of many important topics resolutions embodying the sense of the convention as to pertinent and practicable measures were adopted as follows:

That the responsibility of instituting and executing measures to improve sanitary conditions among the negroes is largely that of the white man; that the active cooperation of the more intelligent negroes should be asked and their services utilized as far as possible in executing the plans adopted; that one point of attack should be on prevailing insanitary housing conditions, the disposal of night soil and other wastes, provision of a wholesome and adequate water supply, ventilation, and light that each state and municipality obtain exact information as to the prevalence of tuberculosis, venereal and other diseases among negroes; that practical preventive measures applicable to local conditions be instituted; that the data gathered be transmitted to the local and state health officers; that instruction, definite and persistent, in the primary principles of health be given, especially by a program on health topics in every negro school in the state and sermons and talks on sanitation in every negro church at frequent intervals; that teachers be asked to emphasize the element of self control; that visiting district nurses be employed; that each state and city board of health be requested to take action to carry these recommendations into effect; that the American Medical Association, the American Public Health Association, the Southern Medical Association, the Southern Sociological Congress, the Southern Commercial Congress, the National Educational Association of America, the National Housing Association, the Federation of Women's Clubs, and other health and educational organizations, be requested to establish standing committees on the health of the negro.

The resolution committee consisted of Wm. C. Woodward, Washington, D. C.; James A. Hayne, S. C.; C. W. Garrison, Ark.; T. F. Abercrombie, Georgia; John C. Bell, Memphis; Herman Oechsner, Thos. A. Roy, La.; S. R. Mallory Kennedy, Florida; Oscar Dowling, La.

MARYLAND

Room Dedicated to Dr. Towler.—A room in St. Luke's Hospital, Baltimore, was dedicated with appropriate ceremonies to Dr. Philip B. Towler, April 13.

Fresh Air Society.—At the annual meeting of the Fresh Air Society in Baltimore, April 14, the officers were reelected, and Dr. Armfield F. Van Bibber, Bel Air, made member of the board of directors.

Presentment against Navy Surgeon.—A presentment against Asst.-Surg. Ralph W. McDowell, of the Navy, on the charge of assaulting with intent to kill Frank Green, Jr., of Annapolis, was returned to-day by the Anne Arundel County grand jury. Surgeon McDowell promptly appeared before court and renewed bail for $1,000.

Personal.—Dr. Eugene McE. Van Ness, who was operated on about a month ago for appendicitis at the Union Protestant Infirmary, has recovered.——Dr. Van Den Berg, one of the European delegates to the International Surgical Congress in New York City, is reported to be seriously ill with pneumonia at the Hotel Belvedere, Baltimore.

Dr. Henkel Asks for Investigation.—Dr. Louis B. Henkel, Jr., of Annapolis, a former member of the State Board of Medical Examiners, who has been mentioned in affidavits bearing on the sale of advance questions for two medical examinations, has forwarded a communication to Dr. Herbert Harlan, Baltimore, president of the board, demanding an investigation. A thorough inquiry will be made and the board will take up the entire subject at its next meeting.

Health Report.—According to the weekly bulletin issued by the Department of Health last week, 238 persons died in Baltimore during the week. During the corresponding period of last year, 187 persons died, 245 in 1912 and 233 in 1911. Tuberculosis was the cause of more deaths than any other disease. There were six suicides and seven died as the result of accidents. There were forty-five deaths from pneumonia. The births reported were, total 256: white, 189, colored, 67; males, 116; females, 140.

Stamping Out Typhoid.—Health Commissioner Nathan R. Gorter has sent out a bulletin to all physicians in Baltimore calling their attention to the marked improvement in the number of typhoid cases and the lessened number of deaths from that disease since last December. Accompanying the explanation was a table which was prepared by both Dr. Gorter and his assistant, Dr. C. Hampson Jones, showing the number of typhoid cases and deaths for each month, beginning with the year 1909 and ending with March, 1914. The physicians are asked to help the department in the study of the disease.

Campaign for Mercy Hospital.—The campaign committee of Mercy Hospital recently held an enthusiastic meeting in the board rooms and took up the details of the "whirlwind" started April 22, which will be continued until May 5, when it is hoped the last of the $320,000 desired will be raised. Since the formal announcement preparations have been made for the sending out of more than 100,000 letters which will tell in detail the reasons why the management needs the $320,000; banners will be swung over the streets; there will be three electrically illuminated thermometers which will daily register the amount of money collected, and motorcyclists also will assist in the campaign by carrying streamers on their machines on Sunday.

MASSACHUSETTS

Personal.—Dr. G. V. N. Dearborn has been appointed consulting physiologist to the Forsythe Dental Infirmary, and not consulting physician, as erroneously stated two weeks ago.

Health Talks.—The first of a series of booklets issued by Harvard University under the subject-head of "Health Talks," is by Dr. John Lovett Morse, Boston, "The Care and Feeding of Children." The second volume, by Dr. Otto Folin, on "Preservatives for Food, Their Use and Abuse," is now on the press. Additions to this series will follow in a short time.

Hospital Staff.—Announcement is made of the personnel of the staff of the new St. Elizabeth's Hospital, Brighton, which is rapidly nearing completion: supervisor and physician in chief, Dr. John R. Slattery; associate physician in chief, Dr. Thomas F. Harrington; physician, Dr. Michael J. Cronin; surgeon in chief, Dr. John W. Lane, vice Dr. William A. Brooks, resigned; surgeon, Dr. Edward A. Supple; chief of urologic department, Dr. Arthur L. Chute; orthopedic surgeon, Dr. Thomas F. Broderick, Jr.; obstetrician, Dr. Thomas F. Greene; roentgenologist, Dr. Patrick F. Butler; director of laboratory · serum diagnosis, Dr. Andrew F. Dowing, and consulting obstetrician, Dr. Henry S. Rowen.

MICHIGAN

Personal.—Dr. Rudolph J. E. Oden, Cadillac, sails for Europe, May 16.——Dr. Wilfrid Haughey, Battle Creek, read a paper before the Detroit Oto-Laryngological Society, April 21.——Dr. Otto T. Freer addressed the Detroit Oto-Laryngological Society, April 21, on "The Intranasal Operation for Chronic Empyema of the Frontal Sinus."

Sanatorium Annex at Detroit.—Building operations on the new unit of the Detroit Tuberculosis Sanatorium, for which $50,000 was collected in the recent campaign in Detroit, will be begun as soon as the contracts can be let.

Measles at Kalamazoo.—More than five hundred cases of measles were reported to the Health Department since February 1. For the week ended April 20, 112 cases were reported and there were 300 cases in the city at that time.

Work on Receiving Hospital.—Joseph A. Marks, president of the Detroit Poor Commission, turned the first sod at the site of the new receiving hospital at Detroit, March 25. The building will cost about $200,000, and is expected to be completed November 1.

New Isolation Hospital for Ann Arbor.—The New Isolation Hospital, for which Ann Arbor issued municipal bonds for $25,000 a year ago, is nearly completed. It is constructed on the bungalow type, is 103 by 40 feet, and will accommodate twenty-four patients.

The April Bulletin.—*Public Health*, the bulletin of the Michigan State Board of Health, for April departs somewhat from the usual program of papers on medical, hygienic and sanitary subjects and contains twelve papers of a sociologic nature, dealing chiefly with the family, the relation of parents and children, schools and school hygiene, sex teaching, etc. The papers are highly interesting and valuable and should prove of great popular interest. The bulletin contains in addition editorial matter, statistical tables, laboratory reports, etc., portraits, cartoons and information concerning the traveling exhibit of the board.

MINNESOTA

Personal.—Dr. John H. Crowe has been elected health officer of Virginia.——Dr. Conrad A. Neumann, Lewiston, who has been ill with septicemia at Rochester, Minn., has returned home convalescent.——Dr. John S. Johnson, St. Paul, has started for Norway, taking with him the exhibits prepared by the Minnesota commission for display at the Norwegian Centenary Exposition, Christiania.——Dr. Oliver H. McMichael, Vernon Center, announces his retirement from practice. He expects to move to Minneapolis.

Reorganization of State Board of Health.—A reorganization of the laboratory, epidemiology and sanitary engineering divisions of the State Board of Health was perfected at a meeting held April 14. Hereafter there will be but two divisions, infectious diseases and sanitation, the work of the laboratory division being divided. Dr. Albert J. Chesley will retain his position as head of the division of infectious diseases, and in addition will take over the laboratory work having to do with diagnosis of diseases. Dr. Hugh H. Miller, in charge of the present laboratory division, and Prof. S. H. Bass, head of the sanitary division, will retire to devote their entire time to their teaching work in the University of Minnesota. The new sanitary division will be under the direction of H. A. Whittaker, assistant director and chief chemist of the laboratory division.

MISSISSIPPI

New County Society Publication.—The Clarksdale and Six Counties Medical Society, comprising the counties in the northern part of the state, began in April the publication of a bulletin giving the news of the activities of the society and providing the members with information as to past and coming meetings. It is called the *Six Counties* and is to be published monthly. At present it consists of a four-page folder which contains a list of the members in 1914 with their addresses, a report of the March meeting, a number of announcements, editorial comment, etc., and is altogether a bright and snappy bulletin. It was established to supply a need for some means of communication between the officers and the members of the society other than the semi-annual meeting. It is edited by Dr. Thomas M. Dye of Clarksdale, secretary of the society.

MISSOURI

State Association Meeting.—The annual meeting of the Missouri State Medical Association will be held in Joplin, May 12 to 14, under the presidency of Dr. Enoch H. Miller, Liberty.

Hospital Association Organized.—The Kansas City Hospital Improvement Association has been organized to discuss matters of interest to those intrusted with the care of the hospitals of Kansas City and to devise a better system of cooperation between the various hospitals. The members of the association at present are: Mr. A. C. Stowell, St. Luke's Hospital, president; Drs. R. E. Castelaw, superintendent of the General Hospital, secretary; Fred L. Woodell, superintendent of the German Hospital; J. Archie Robinson of Wesley Hospital; S. C. Fox, Missouri Pacific Hospital; Rev. A. W. Linquist, superintendent of Swedish Hospital; Noad Adams of the Baptist Hospital and J. W. Perkins of the University Hospital.

NEW JERSEY

Hospital News.—A three-story brick and terra cotta structure is to be erected at Glen Ridge, opposite the present Mountainside Hospital. The building will accommodate 100 patients. The Board of Health of Paterson has decided to erect a tuberculosis pavilion at a cost of $15,000, to accommodate fifteen patients. A bungalow is also to be erected for the accommodation of the nurses.

Hospital Staff Selected.—Dr. J. Alexander Browne, executive officer of the Paterson Isolation Hospital, has selected the following staff for that institution: Consultants—Drs. Henry Parke, J. William Atkinson, Emanuel L. Henion; dermatologist—Dr. Charles R. Mitchell; pathologist—Dr. William F. Gutherson; visiting staff—Drs. Henry E. Briody, Joseph V. Bergin, William J. Whalen, William H. Jacob, Theodore Bender, George J. Koch, Paul E. Rauschenbach and Orville R. Hagen.

NEW YORK

Personal.—Dr. Frederick M. Meader has resigned as city bacteriologist of Syracuse, and has been succeeded by Dr. Oliver W. H. Mitchell, assistant professor of bacteriology and preventive medicine in the University of the State of Missouri, Columbia. Dr. Mitchell also succeeds Dr. Leverett D. Bristol as assistant professor of bacteriology.——Dr. Leverett D. Bristol, Syracuse, has resigned from the faculty of Syracuse University to take charge of the North Dakota State laboratory.——Dr. Horace M. Hicks, health officer of Amsterdam, was operated on for hernia at the General Memorial Hospital, New York City, April 16.——Dr. Edmund C. Boddy, for fourteen years city physician of Rochester, has resigned.

Legislation at Albany.—Governor Glynn has signed a bill appropriating $50,000 as an emergency fund for the Health Officer of the Port.——The Christian Science bill which proposed to allow Christian Science healers to practice under the Medical Practice Act of the State has been vetoed by Governor Glynn. In the veto he said, in part, that the bill would have opened the gates to all kinds of medical pretenders, who, as a matter of fact, treat the sick without the use of any drug or material remedy, and who, if this bill were approved, would swarm across our borders and pretend to practice medicine on our citizens.——Governor Glynn has signed the Walter's bill relieving pharmacists, apothecaries and druggists from some of the restrictions of the labor law so that the sick will not be compelled to rely on Sundays on the exclusive services of the proprietor for the whole twenty-four hours.——A bill designed to simplify the procedure necessary for the detention of weak-minded persons in state institutions has also been signed by Governor Glynn. This bill authorizes any judge of a court of record to determine the mental condition of a suspected person on the application of a relative, friend, parole, or school officer, the application to be accompanied by a certificate signed by two physicians. The governor at the same time approved

the bill appropriating $4,000 for the expenses of a commission to investigate the care, custody, treatment, and training of the mentally defectives to recommend remedial legislation next year.

New York City

Fraudulent Advertising Punishable.—A bill has recently been passed by the board of aldermen which provides that any one guilty of publishing an advertisement containing assertions, representations, or statements which are untrue, deceptive, or misleading, shall be subject to a fine of not less than $25. Steps are being taken by the Department of Health to make the same use of this law that has proved so effective in Chicago in a campaign directed against venereal quack advertising.

NORTH CAROLINA

New Sanatorium.—Dr. Charles S. Minor and William L. Dunn, Asheville, have purchased 60 acres of land on the south slope of Mt. Pleasant, on which they will erect a sanatorium for tuberculosis, at an expense of about $250,000.

OHIO

Physical Examination of Employees Required.—A system of physical examination of all employees of the Republic Iron and Steel Company, Youngstown, has been organized, and an examination will be made of employees, both in the mills and offices.

State Association Meeting.—The sixty-ninth annual meeting of the Ohio State Medical Association will be held at Columbus, May 5, under the presidency of Dr. George A. Fackler, Cincinnati. The oration on surgery will be delivered by Dr. Robert Abbe, New York City, and that on medicine by Dr. David L. Edsall, of Harvard Medical School.

Personal.—Dr. Sherman Leach, Columbus, is reported to be seriously ill at his home with pneumonia, following an attack of rheumatic arthritis.——Dr. Charles C. Dreyer has succeeded Dr. George L. Chapman as chief of staff of the district physicians of Toledo.——Dr. Jesse W. Hull has been appointed workhouse physician of Toledo.——Dr. Don C. Hughes, Findlay, who underwent an operation at the Holman Hospital, April 16, is reported to be making satisfactory progress.——Dr. Rufus C. Pennywitt, Dayton, assumed his duties as registrar of vital statistics of the Health Department, April 17.——Dr. George T. Haverfield, Uhrichsville, was seriously burned in a fire in his office, April 17, while attempting to save his negro attendant.——Dr. William C. Martin, Cleveland, has succeeded Dr. John Claypool, resigned, as physician of the Ohio State Sanatorium, Mount Vernon.——Dr. William S. Reed, Stockton, fractured both clavicles and three ribs in an automobile accident, April 11.

OKLAHOMA

New Building for State Hospital.—The new building of the State Hospital, Vinita, will be completed July 1, and will accommodate three hundred patients.

New Officers.—Pawnee County Medical Society, organized at Hallett, March 31: president, Dr. Harman D. McFarland, Cleveland; secretary-treasurer, Dr. James C. Hawkins.

Personal.—Dr. Kelley D. Gossom, Custer, is recovering from an attack of appendicitis.——Dr. Alexander X. Campbell, Grandfield, has succeeded Dr. Hugh Scott, Dustin, as receiver for the United States Land Office, Guthrie.——Dr. Luther W. Troutt, Afton, was thrown from his automobile and seriously injured in a collision with a bridge rail, recently.——Dr. Luther Mathis, Fairview, was seriously injured by the overturning of his automobile near Guthrie, March 17.——Dr. and Mrs. Robert M. Howard, and Dr. and Mrs. Antonio D. Young, Oklahoma City, sailed from Boston for Europe, April 25.——Dr. Thomas S. Williams, Stilwell, who has been ill with small-pox, has recovered

PENNSYLVANIA

New Buildings for State Institution.—New buildings are to be erected at the state institution for the Feeble-Minded and Epileptics, near Spring City.

Personal.—Friends of Dr. Joseph T. Rothrock, West Chester, state forestry expert, will tender to him a testimonial luncheon in Harrisburg, May 4.——Dr. Ellis M. Harvey, Media, has been elected president of the Media Borough Council.

Medical Institutions.—During May the Elkins Memorial Hospital of Abington, Old York Road, will open for service, a substantial addition to the medical facilities of Philadelphia suburbs. The staff will include: Surgical—Drs. Duncan L. Despard, J. Dean Elliot and Damon B. Pfeiffer; consultants, Drs. Richard H. Harte and William B. Van Lennep; orthopedic—Dr. Arthur B. Gill; medical—Drs. Sumner Cross, Francois L. Hughes and Thomas Reading; consultants, Drs. Alfred Stengel and Clarence Bartlett; gynecologist, Dr. Floyd E. Keene; consultant, Dr. John G. Clark; obstetrician, Dr. Milton K. Neiffer; pediatrics—Dr. J. P. Crozer Griffith; laryngologist, Dr. J. Frederick Knauss; ophthalmologist, Dr. J. Frederick Herbert, and consultant, Dr. William C. Posey.

Philadelphia

Fraternity Banquet.—The annual Interchapter banquet of the Phi Chi Medical Fraternity was held April 16, at the Hotel Walton. The chapters represented were those of the Jefferson Medical College, Medico-Chirurgical College, University of Pennsylvania and Temple University. The toastmaster was Dr. Theodore H. Wiesenburg. The guest of honor was Dr. Richard C. Cabot of Harvard University, and other speakers were Dr. William W. Babcock and Dr. George E. Price.

Clean-Up Week.—The final results of clean-up week have not yet been published, but fully 15,000 cubic yards of waste was taken from the districts where the warfare against disease-breeding dirt and fire-breeding rubbish was waged, on the second day, April 21. This amount was half as much again as that gathered on the first day. The normal force of rubbish collectors was augmented from 86 to 131 men. The teams and vehicles numbered 160. So great was the accumulation of trash that the Waste Reduction Company was swamped, and much of the material had to be taken to the city dumps instead of being utilized for its by-products.

For and against Vivisection.—A public meeting of the Philadelphia Pediatric Society will be held in the College of Physicians Building, Twenty-Second Street, above Chestnut, on Tuesday evening, May 5, 1914. The program will be devoted to "The Value of Animal Experimentation in the Diagnosis and Treatment of Disease in Children." "Its Value in Diagnosis" will be shown by Dr. Alfred Hand, Jr., of Philadelphia, and "Its Value in Treatment" by Dr. Henry Dwight Chapin, professor of diseases of children in the New York Post-Graduate Medical School. The purpose of the meeting is to give the Philadelphia public an opportunity to learn something of the value of animal experimentation to the life and health of its children.

At a meeting of the Board of managers of the American Anti-Vivisection Society, John R. K. Scott was retained as counsel and authorized to institute proceedings against all practitioners of vivisection whom he believes to be guilty under an opinion handed down recently by Judge Bregy.

In reply to a letter from the provost of the University of Pennsylvania, questioning the legality of certain experimental work now being carried on at the university, in the light of Judge Bregy's ruling, that operations which inflict pain on animals may be legally performed only with the object of benefiting the animals themselves, Samuel Dickson, chairman of the Committee on Law and Legal Relations of the Board of Trustees of the University of Pennsylvania, sent a letter disagreeing with the opinion of Judge Bregy. (See page 1423, this issue.)

April 22, at the meeting of the Philadelphia County Medical Society, representing 1,700 of the physicians of this city and vicinity, resolutions were adopted, affirming the full confidence of the society in the physicians being prosecuted by the Philadelphia Society for the Prevention of Cruelty to Animals.

TEXAS

State Association Meeting.—The annual meeting of the State Medical Association of Texas will be held in Houston, May 12-14, under the presidency of Dr. Marvin L. Graves, Galveston.

Quarantine Edict.—The annual quarantine proclamation by the governor was issued March 27, declaring that quarantine be established along the Gulf Coast and Rio Grande border April 1, and continue until the edict is revoked.

Green Crosses for Physicians.—Because of the objection of the American Red Cross to the use of its insignia by others, an ordinance has been introduced before the San Antonio city council providing that physicians whose automobiles bear a green cross will be given right of way by traffic policemen.

V. 19

Societies Consolidate.—The proposal of consolidation of the Fifth and Sixth District Medical Societies of Texas was accepted by the former organization at its semi-annual convention at San Antonio. The summer convention of the merged societies will be held at Corpus Christi, and the winter session at San Antonio.

Hospital Notes.—The Howard County Hospital Association has been organized at Big Springs with the object of building a modern and well-equipped hospital.——A fund of $20,000 has been set aside for the erection of a hospital at the Masonic Home, near Fort Worth.——Ground has been broken for the erection of the Industrial Bay Home, Houston.——The new Denison City Hospital was thrown open to the public for inspection, April 12.——The building committee in charge of the erection of the Fort Worth City-County Hospital has inspected and approved the completed building. It was formally opened last week.——The new Amason-Hargrave Hospital at Wichita Falls was formally opened March 24.

Personal.—Dr. William R. Talboy has been appointed Health Officer of Galveston, vice Dr. Frank N. Danforth, Texas City, resigned.——Dr. William I. Swangem suffered a loss of $5,000 by the burning of his building at Terrell, April 6.——Dr. John C. Silliwan, Palestine, has started for Vancouver, Wash., en route to China and Japan.——Dr. Sidney M. Lister has been elected president of the Board of Health, Houston.——Dr. Frank M. Mullins, Fort Worth, is said to be seriously ill as a result of a hemorrhage, March 28.——The office of Dr. George W. Creswell, Crosbyton, was destroyed by fire, March 26.——Dr. Quincy B. Lee has resigned as city bacteriologist of San Antonio.——Dr. Lamartine O. Dudgeon, Sweet Water, sustained a fracture of three ribs and concussion of the brain by the overturning of his automobile near Roscoe, March 26.

WISCONSIN

Dr. Vaughan Entertained.—April 22 Dr. Victor C. Vaughan, Ann Arbor, Mich., was entertained at dinner by members of the medical profession of Milwaukee.

New Officers.—Washington County Medical Association at West Bend: president, Dr. Willibald J. Wehle; secretary-treasurer, Dr. S. Driesel, both of West Bend, both reelected.

New Buildings for Sanatorium—The contract has been awarded for the construction of three dormitories and a warehouse at the State Tuberculosis Sanatorium, Wales, to cost $25,200.

Personal.—Dr. George C. Ruhland, city bacteriologist of Milwaukee, has been appointed health commissioner, vice Dr. Frederick A. Kraft.——Dr. Kraft expects to spend several months in Europe.

Ravenel to Go to Missouri.—Dr. Mazyck P. Ravenel, professor of medical bacteriology in the University of Wisconsin, and director of the public health laboratory, has been appointed to a similar position at the University of Missouri, Columbia.

Wisconsin Surgeons Hold Meeting.—The Wisconsin Surgical Association held its first annual meeting at Milwaukee, April 22 and 24, under the presidency of Dr. Alfred H. Levings. The days of the meeting were taken up with clinics at the various hospitals, and in the evenings various papers were read and subjects of surgical interest discussed.

GENERAL NEWS

Students of Epilepsy.—The annual meeting of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics will be held at the Hotel Belvedere, Baltimore, May 25, under the presidency of Mr. William C. Graves, Chicago.

Death of Colonel Appel.—News has just been received of the sudden death of Col. Daniel M. Appel, M. C., U. S. Army, chief surgeon of the Department of Hawaii at Honolulu, April 22. As a result of Colonel Appel's death, Lieut.-Col. Jefferson R. Kean is promoted to colonel; Major Charles Lynch to lieutenant-colonel, and Capt. John L. Sheppard to major.

Bequests and Donations.—The following bequests and donations have recently been announced:

College of Medicine of the University of Cincinnati, a medical endowment fund of $31,400, to be known as the Thomas Gibson fund, being the residue of will of Mrs. Frances W. Gibson.

Milford, Mass., Hospital, a permanent fund of $100,000, by the will of Gov. Eben S. Draper.

Typhus Fever.—According to *Public Health Reports*, April 17, since Nov. 19, 1913, nineteen cases of typhus fever have been discovered in immigrants arriving at Atlantic ports from Europe. Seven of the cases arrived at Providence from Marseilles and Naples and twelve at the New York quarantine, mainly from Southern European ports. Typhus became epidemic in Tokyo, Japan, and from March 20 to April 5, 1,750 cases were notified. The mortality has been about 12 per cent. The officers of the United States Public Health Service stationed at Tokyo immediately put into operation the United States quarantine regulations for ships and passengers clearing for the United States.

Conference on Tuberculosis.—The Mississippi Valley Conference on Tuberculosis, called by A. E. Kepford, state lecturer of the Department of Tuberculosis of the Iowa State Board of Control, and James Minnick, secretary of the Illinois State Association for the Prevention of Tuberculosis, will be held at Memphis, Tenn., at the time of the National Congress of Charities and Correction. The conference is called to bring together on a common platform all who are interested in the tuberculosis movement in the Mississippi Valley, and to discuss certain aspects of the problem; first, to bring about a better understanding and agreement in regard to other philanthropic work, especially in the relief of individuals and families who have become dependent because of tuberculosis; second, to arouse interest in extending tuberculosis propaganda in the rural districts of the Mississippi Valley, and third, to plan a tuberculosis law best adapted to the needs of this section of the country.

FOREIGN NEWS

Plague at Santiago.—Under date of April 20, a fatal case of bubonic plague was reported to the State Department, from Santiago, Chile. Active measures were being taken to prevent the spreading of the disease.

Plague in Havana.—April 23 two new cases of bubonic plague were reported at Havana, one from Artesima, a small town a few miles from Havana. Up to date the cases number twelve and the deaths two. April 25 an American passenger on a boat from Mobile to New York was reported as held at Havana as a plague suspect under the direction of Surg. R. H. Crell of the U. S. P. H. S.

CANADA

Mining Accidents in Ontario.—In the year 1912 there were 13,108 persons employed in the producing mines of Ontario, and 2,000 in non-producing mines. Of these 43 were killed, of which number 32 deaths were due to the fault or neglect of the workmen, or the managers of the works, and were preventable accidents. The total number of serious accidents was 238. The fatalities are classified as follows: To danger inherent in the work, 10, or 23.3 per cent.; defects in the mine workings, 8, or 18.6 per cent.; faults of fellow-workmen, 1, or 2.3 per cent.; fault of injured persons, 23, or 53.5 per cent.; unclassifiable, 1, or 2.3 per cent.

Cancer in Ontario.—Cancer continues to take a high toll of life in the province of Ontario. In 1912 there were 176 more deaths from this cause than in 1911. The deaths in the last ten years ran as follows: 1903, 1,156; 1904, 1,253; 1905, 1,224; 1906, 1,411; 1907, 1,329; 1908, 1,348; 1909, 1,597; 1910, 1,587; 1911, 1,602; 1912, 1,778. Cancer is the third most active cause of death in that province, organic heart disease being the first and tuberculosis second. As the total mortality in Ontario in 1912 was 32,150, the percentage of cancer deaths was 5.53 of the total deaths. There were 150 deaths from cancer of the buccal cavity; 570 from cancer of the stomach; 258 from cancer of peritoneum, intestines and rectum; 159 from cancer of the female genital organs; 116 from cancer of the breast; 11 from cancer of the skin, and 514 from cancer of other organs not specified.

Personal.—Dr. John Ferguson, Toronto, editor of *The Canada Lancet*, has been elected president of the Canadian Fraternal Congress; Dr. William S. Harrison, Toronto, vice-president, and Dr. Thomas Millman, Toronto, chairman of the medical section——Prof. J. George Adami, McGill University, Montreal, has been reelected president of the City Improvement League.——The Hon. Dr. Albert R. Pyne, Minister of Education for Ontario, was recently presented with a solid silver tea service by his colleagues in the legislature for his professional attention to the Prime Minister, Sir James Whitney, during his recent severe illness.——Dr. Bruce L. Riordan, Toronto, has been elected president of The Aesculapian Club; Dr. George A. Bingham, vice-president; Dr. Edmund E. King, treasurer, reelected; Dr. George Elliott, secretary, reelected.——Dr. Alexander Primrose,

Toronto, has resigned from the professorship of medicine and surgery in the Royal College of Dental Surgeons, Toronto. ——Dr. William Goldie, Toronto, has been appointed director of the medical clinic of the out-door department of the Toronto General Hospital.——Dr. Harvey Clare, assistant medical superintendent of the Toronto Hospital for the Insane, has been appointed demonstrator in psychiatry in the medical faculty of the University of Toronto.

CANAL ZONE

No Plague on Board the "Aysen."—An examination of a reported case of bubonic plague on board the steamship *Aysen*, held in quarantine at the Culebra Island station, was conducted April 10 by Dr. Samuel T. Darling, chief of Ancon Hospital laboratory and member of the board for the diagnosis of infectious diseases, with negative results. The chief health officer and the chief quarantine officer were present during the examination. Bacteriologic examinations of material obtained at the time of examination were also negative for plague.

LONDON LETTER

LONDON, April 17, 1914.

Royal Commission on Venereal Diseases

At the twenty-sixth meeting of the Royal Commission on Venereal Diseases Dr. Douglas White submitted an estimate of the prevalence of venereal diseases in the United Kingdom. No direct statistical basis is available, but from a consideration of the existing statistics regarding venereal diseases in this country, and a careful comparison (in which an attempt was made to allow for difference in conditions) with the estimate which has been made as a result of a statistical inquiry in Prussia, Dr. White arrived at the conclusion that there were every year 122,500 new cases of venereal disease in London and 800,000 new cases in the United Kingdom. He computed that of the 800,000 new cases 114,000 would be syphilis and the remaining 686,000 gonorrhea and chancroid. From these figures he deduced that there must be in the United Kingdom about 3,000,000 syphilitics. As regards syphilis Dr. White compared these results with the estimate obtained by assuming that a certain percentage of cases of syphilis find a conclusion in general paralysis or locomotor ataxia. The figures obtained from the results of notification in Denmark led to the conclusion that in that country rather less than 2.5 per cent. of syphilitics died from general paralysis. In the United Kingdom there are about 2,600 deaths annually from general paralysis and about 700 deaths from locomotor ataxia. If it may be assumed that 3 per cent. of cases of syphilis result in deaths from these diseases, the conclusion is reached that there are about 111,000 syphilitic infections annually. This figure Dr. White compared with the 114,000 fresh infections estimated by the indirect method already mentioned. Passing to the means of combating venereal diseases, Dr. White said that prevention would depend on two elements, facilities for treatment and education. He regarded ignorance of the public as the root factor in the spread of venereal disease. Adolescents of both sexes should be instructed in sex hygiene. At schools a course of lectures might be given by physicians, and a similar course with special reference to disease and the need for early treatment might be arranged. In addition the government should employ physicians and possibly some specially instructed laymen to give lectures to employees at large factories; for girls, women lecturers should be employed.

"The Family Encyclopaedia of Medicine"

The profession has been aghast at the issue to the public of a work entitled "The Family Encyclopaedia of Medicine" with the names attached to it of thirty of the most eminent consultants of the day, which have been published as a display advertisement in the daily press and even on boards carried by "sandwich-men." According to the advertisement "the work thus bears the stamp of the highest authority and those who consult it may do so with full confidence that they will find in its pages a reflection of the best medical opinion of the day. The fortnightly parts will cover the whole field of Medicine, Surgery, Diseases of the Skin, Diseases of Women and Children, Diseases of the Nose, Throat and Eye, and will give also much valuable information on Diet, Exercise, Sanitation and other kindred subjects. No household should be without a work of such permanent value, and no household need be without a work which costs so little as sevenpence a part." The work has been extensively reviewed by the lay press and in some cases the public has been informed that the eminent author of a certain section is just the person to consult for the particular malady. Naturally the question was asked, "If a humble physician is subject to penalties for advertising what is to be done in the case of these eminent persons?" The explanation then was given. Some enterprising publishers, well known for supplying blatant but popular journals, engaged a physician to write the encyclopedia. Desiring the assistance of authorities on the various branches of medicine, he submitted to them the proofs for revision. It appears that they gave their assistance merely to oblige him without fee or reward and did not authorize the use of their names. While the physician in question was ill and absent from London, the names were published with the first part of the work. By their request the publishers have undertaken not to issue their names with the subsequent parts. Such is the explanation given of this "accident." But if accident it be it seems to have been a very profitable one for some of the persons concerned.

PARIS LETTER

PARIS, April 10, 1914.

The Fourth Centenary of Vesalius

April 2, at the Sorbonne, Dr. Tricot-Royer called a conference under the auspices of the Société des Amis de l'Université de Paris to consider the subject of the fourth centenary of Andreas Vesalius, the great anatomist, who was born in Brussels in 1514. At the time when other children dream of toys, nothing attracted Vesalius but butcher-shops. He dedicated his modest savings to the purchase of the bodies of animals, which he examined with curiosity. Later it was human anatomy that he desired to comprehend. In the face of every risk, he stole the bodies of executed criminals. For dissecting a woman in lethargy, the Inquisition condemned the great anatomist to make a pilgrimage to Jerusalem. On his return from the Holy Land, he was shipwrecked and cast on the island of Zante, where he died in 1564. The intention is to raise a monument to the memory of Vesalius on this very island, next August, under the auspices of the Belgian government.

Death of Dr. Conor

Dr. Alfred Conor, assistant director of the Institut Pasteur de Tunis, has just died as the result of a slight wound which he received in the course of an experiment on a guinea-pig, which brought on a sickness of long duration, the nature of which could not be determined. March 22, as a result of a special decree, he received the cross of the Legion of Honor on his death-bed. A collaborator of Dr. Charles Nicolle, Dr. Conor took a very active part in the work of the former in the vaccine therapy of whooping-cough (THE JOURNAL, July 19, 1913, p. 209), and in the intravenous inoculation of man by means of dead or living typhoid bacilli, etc.

The Retirement of Dr. Jules Boeckel

At the meeting of March 25, the Société de chirurgie de Paris elected as honorary member, without his having been a candidate, Dr. Jules Boeckel of Strassburg, on the occasion of his retirement from the hospital. Remaining in Strassburg after the war of 1870-1871, Dr. Boeckel, as surgeon of the municipal hospital, had an exceedingly active career. Since 1895, as corresponding member of the Académie de médecine de Paris, he presented the major part of his scientific work before the French scientific societies. For forty years he directed the *Gazette médicale de Strasbourg*, and during the twenty-eight years from 1870 to 1898 it was the only journal, in the annexed provinces, which was printed in the French language.

The desire expressed by Dr. Boeckel to give his services free to the municipal hospital of Strassburg for four years, so that he might celebrate his fiftieth year there, was refused. Among the Alsacians much indignation was manifested at this refusal, which was explained as the tendency of the authorities to extirpate everything which would serve to recall the French traditions; therefore, the news of his election as an honorary member of the Société de chirurgie de Paris was received as a consolation.

Compulsory Antityphoid Vaccination in the Army

The *Journal officiel* has just published the law making the antityphoid vaccination of the soldiers of the standing army compulsory. In response to the request of a deputy, Dr.

Doizy, the application of the law was defined so as to leave the army physicians free to use their judgment in vaccinating or not vaccinating, according to the suitability of the case.

Personal Mention

March 29, at the Beaujon Hospital, the friends and fellow-workers of Dr. G. Bardet, director of the general hydrology laboratory of the Collège de France, presented him with a medal, struck in his honor. The twenty-fifth anniversary of Dr. Bardet's general secretaryship of the Société de thérapeutique was also celebrated.

The death is reported of Dr. C. Vanlair, former professor of internal pathology at the Faculté de médecine de Liège, and former member of the Académie de médecine de Paris.

BERLIN LETTER

BERLIN, April 16, 1914.

Friedmann's Tuberculosis Remedy

In the current issue of the *Deutsche medizinische Wochenschrift* appear several articles on the Friedmann remedy.

EXPERIENCES OF BRAUER IN DETAIL

The first is from the pen of the director of the Hamburg Hospital, Professor Brauer. It contains a thorough description of the experiences of which Brauer gave an account in a few words at the congress of balneology, as reported in a previous letter (THE JOURNAL, April 18, 1914, p. 1268). From the present extensive publication it appears that in the Eppendorf Hospital since September, 1913, eighteen patients in all were treated according to the Friedmann method, the patients being in the two wards for internal medicine and in the children's section. In addition, facts are stated which have been obtained from Dr. Treplin, the head physician of the Hamburg Marine Hospital at Salenburg near Cuxhaven. It is quite noteworthy and important that the injections for the most part were made by Friedmann himself, so that the favorite objection that technical mistakes are responsible for the unfavorable results does not apply. Moreover, Brauer himself as well as his coadjutors have received personal instruction in Friedmann's institute in Berlin. The results of the observations are summarized as follows: Very severe reactions were repeatedly observed following the intravenous injection. In three cases, very threatening conditions resulted. Focal reactions at the site of the tuberculous process were not observed with certainty. In one patient who had been treated by another physician, Brauer punctured the tender point of injection and cultivated staphylococci from the tissue fluid. In none of the cases treated did the bacilli disappear from the sputum. The temperature and body-weight were not influenced in any notable way by the treatment. In two patients, fresh febrile attacks in the lungs were observed from six to seven weeks after the injection. In one female patient a rapid aggravation of the condition followed this attack, and the patient died from numerous hemorrhages. Three children with surgical tuberculous glands and five children with tuberculosis of the lung, bone and joints were not affected. Brauer comes to the conclusion that these trials have led to a result thoroughly unfavorable to the Friedmann remedy, and that they confirm the adverse judgment which was passed on the remedy by capable American physicians.

RESULTS IN ORTHOPEDIC CASES

Sanitary Councilor (Sanitätsrath) Gaugele reports thirty-two cases of children treated orthopedically at his home for cripples at Zwickau. In twenty-one cases there occurred marked abscess formation which in part produced enormous quantities of pus. In many cases the suppuration began many weeks after the injection. One child died from miliary tuberculosis, but it is questionable whether this unfavorable result can be referred to the remedy itself. In another case, Gaugele has no doubt that the child was brought to the brink of the grave by the injection. The remedy has hitherto not freed the body from the tuberculous poison. All the children treated gave a strong positive reaction by von Pirquet's test. So far no change in the condition of the bone or the joints can be seen in the Roentgen pictures. The treatment was first begun in the middle of December.

TREATMENT OF LUPUS

The dermatologist, Dr. Brauer of Danzig, reports his results with the treatment of lupus. In all cases he was able to demonstrate a local reaction which was less marked in the circumscribed lupus infiltrations and was never observed in the lupus nodules imbedded in the firm cicatricial tissue. Moreover, the improvement which in some cases was very striking and began on the third day after the injection, ceased soon after. In many cases the improvement continued only from ten to fourteen days and in no case longer than three weeks. The improvement was always followed after a few weeks of apparent inactivity by a renewed aggravation. In no case could the therapeutic result obtained six weeks after the injection compare with those which could be secured by local treatment in the same time.

BACTERIOLOGIC CONTAMINATION

The assistant, Dr. Biermann, from the first medical clinic of the Charité, reports that he found bacteriologic contamination in one ampule of the remedy but that the staphylococci did not prove to be pathogenic. But he also emphasizes the fact that the Friedman remedy is not at all free from objection, for the first demand to be made of a preparation that is to be used for the treatment of the sick by injection must be that it is free from bacterial contamination.

GENERAL OPINION OF REMEDY IN GERMANY

If one adds to these statements the unfavorable opinions which various orthopedists have expressed regarding the Friedmann remedy at the congress of German orthopedists now sitting in Berlin, he certainly cannot be suspected of ill will if he draws the conclusion that a very unfavorable impression has been made by the articles hitherto published in Germany, and while Friedmann in his answer to the articles of Vulpius and Laubenheimer asserted that 35,000 patients had been treated already with this preparation, it is likely that from now on the number will grow very slowly. There can scarcely be a doubt that in the near future other unfavorable experiences will be published.

Meeting of the German Tropical Medicine Society

At the meeting held in Berlin, April 7-9, the following lectures were of general importance:

Staff-Surgeon Rodenwaldt discussed the etiology of bacillary dysentery. According to him, two varieties must be sharply separated: first, the Kruse-Shiga bacillus, which shows a lively molecular movement, is Gram-negative and diffuses in the culture the odor of semen, and in carbohydrate mediums shows certain peculiarities, and second, the groups of the bacillus of Flexner, the Y bacillus or the bacillus of Strong. In the dysentery caused by the first group of bacilli there is a mortality of 50 per cent., while in that caused by the second group, it is only 5 per cent. Bacillary and amebic dysentery may occur together. In the outer world, dysentery bacilli are perishable. The bacilli carriers but not the water-sources are dangerous. Rodenwalt estimates the rôle of the fly in spreading the bacilli as small.

According to the experience of Ruge, the Kruse serum is active in new cases but fails in older ones. In amebic dysentery the emetin method (from ⅔ grain to 2 grains) is especially advantageous.

In the discussion of the emetin method, opinions were divided. Plehn recommended calomel, if necessary, together with bismuth; Ziemann, Carlsbad salt, if necessary, with bismuth. Schilling of Berlin reported the success which he had had with immunizing against trypanosome infection and prefers to immunize with killed trypanosomes. Ziemann has instituted experiments in cultivating *Trypanosoma gambiense*. Frosch and Knuth believe that in the artificial trypanosomiasis of horses a combination therapy of salvarsan, sodium salicylate and ethylhydrocuprein promises successful results. Kuhn made a report on the sleeping-sickness in the western part of Africa.

Personal

Bethe, professor of physiology at Kiel, has accepted a call of a similar nature to Frankfort-on-the-Main.

Privat-Docent Dr. Reiter of Königsberg, has been called to Berlin to take the place of division manager at the Hygienic Institute.

Prize Offer for an Essay on the Climate of German Southwest Africa

The committee for the sending of consumptives to German Southwest Africa has offered a prize for the best essay on the subject, "What Significance Has the Climate of German Southwest Africa for Tuberculosis?" A prize of $720 (3,000 marks) has been assigned. Only those applicants can compete who were or are in practice in German Southwest Africa. The judges are Professor Gaffky in Hanover, Surgeon-General Professor Steudel of the Imperial Colonial Commission and Ministerial Director Kirchner of Berlin.

The Work of One Berlin Insurance Company During 1913

Over 60,000 insured persons or their dependents were cared for during the year 1913 by the Landesversicherungsanstalt Berlin. In order to diminish the dangers of infection with tuberculosis, about 17,000 workmen's families in Berlin are under observation by one of the tuberculosis stations established for this purpose. Here fully 25,000 medical examinations were made; 350 families received assistance in paying their rent, amounting to about $5,000 (20,000 marks) and, in addition, there were provided 235 hospital beds for adults and 22 for children. Over 37,000 visits in the families of consumptives were made by the twelve visiting nurses. In addition to this prophylactic activity, the treatment of the insured sick was vigorously carried out during the year. Altogether, this company has cared for more than 12,000 men and women, fully 2 per cent. of the entire working population of Berlin. Of these fully half were consumptives. For continuing this work on a still larger scale, the company has appropriated nearly $1,000,000 (4,000,000 marks) for 1914.

VIENNA LETTER

VIENNA, April 7, 1914.

Suggestions to Diminish the Number of Medical Students

As has been mentioned, the constant increase of students taking up the medical curriculum has caused much anxiety, both in the profession as a whole and in the teaching institutes of the Vienna University. The former see a severe menace to the profitable outlook of medicine, if the increase continues. The medical faculty is unable to cope with the number of applicants and all the scientific institutes are crowded so that the students can hardly follow up their studies. For instance, in the last year, there were only 116 dead bodies at the disposal of the two anatomic institutes. Over 700 first-year students, apart from those who were more advanced in the studies, were awaiting their turn in the dissecting-halls to dissect all the organs. Various attempts have been made to decrease the influx of students to the medical occupation. Warnings addressed to the head teachers and instructors in the schools were published in the daily papers. The financial outlook was discussed in the daily and weekly papers, showing how unsatisfactory it is. But, on the other hand, political parties opposed the idea of decreasing the number of students, as for special reasons they wanted intelligent men.

Therefore, the Vienna Medical Society nominated a special committee to suggest means for obtaining the desired effect. This committee has just published its opinion. It is based on the idea that out of the odd 12,000 practitioners in Austria alone 500 fall out yearly, either from death or by retiring, but surely the actual loss is smaller by from 300 to 350. To keep up the present percentage of doctors to the population, about 500 promotions yearly to the degree of M.D. would be sufficient. In 1909-1910 this limit was reached, and in 1912-1913 it was 636. As the number of first-year students has increased by more than 50 per cent. since 1908, the number of yearly promotions will increase to 1,200 in the course of three or four years.

The committee has suggested that the present very low costs of the medical course be increased to double the present rate which is about 50 cents per weekly hour and thus bring it to the level of the rates in Germany. Furthermore, with the exception of the native Viennese and those from upper and lower Austria, only those students should obtain admission to the Vienna University who come from countries which have no universities. None of these suggestions apply to postgraduate work or to students from non-European countries. A suggestion made by Professor Hochenegg is worthy of consideration. He suggests that all future students of medicine should have a preliminary year's work in biology, chemistry and physical science. An examination would follow which would decide whether or not they were fit to take up the medical curriculum. Only a limited number of scholarships would be open, and students coming from certain countries could be rejected, if they have a university in their own country. By these means the number of students would rapidly diminish, at least in Vienna, and we would also obtain selected material for taking up the medical career, much to the benefit of the profession and its scientific standard. For the winter term of 1914 the committee suggests that permission should be granted to fix the number of entries until a working method has been devised. These suggestions are now offered for public discussion to those whom it may concern, so as to determine what would be the best plan of action.

An Interesting Decision of a Law-Court on a Wrong Diagnosis

In the hearing of a case for alleged malpractice the judge made an interesting statement which is worthy of recording. A patient injured his limb by a fall from a scaffold and was brought to a public hospital. He was examined and pronounced to be suffering from a distortion of the ankle-joint, and treatment was given accordingly, including cold, wet compresses to the painful parts. Roentgenoscopy revealed nothing serious. The patient's condition, however, was not much improved, and he left the hospital of his own accord. He continued at the outpatient's department, and also interviewed another surgeon without much benefit. Then he went to another hospital, where his condition was diagnosed as a fracture of the lower portion of the tibia and fibula, as was visible in the roentgenogram. But he was told that, owing to the lapse of time, nothing could be done for him without an operation, to which he did not consent. He then sued the first hospital and the first surgeon for damages, because he had received the wrong treatment, owing to a false diagnosis. In the course of the hearing, evidence from medical experts was given to the effect that during the first few days after receiving such an injury, it might be impossible to ascertain the exact nature of the existing pathologic conditions. After repeated adjournments and appeals, the High Court of Justice took the matter over. The judge gave a verdict for the defendants and said that "if a doctor examines a patient with all care, diligence and knowledge at his disposal, he is free from blame, even though he arrives at a very wrong diagnosis." By this decision it is hoped that the frequent claims for damages arising out of alleged wrong diagnoses will become less customary.

The New Income-Tax and the Medical Profession

A few weeks ago, a new law was passed which regulates —this means increases—the income-tax of our country. Severe fines are to be imposed in the future for all knowingly false declarations of incomes. The officials ascertained means to control nearly every class of tax-payers in this respect. Lately, the private hospitals and sanatoriums, in which it is customary with us to operate on the better class of patients, have been forced by the law to disclose to the officials the names of the surgeons who have used the operating-rooms of the institute, the number of operations performed by them, the fees they charged for the work, and all other items useful for obtaining a fair insight into the financial connections between the institute and the surgeons. The sanatoriums now fear that the surgeons will do more operations in their private surgeries and less in the institutes. In another respect, however, the law has been liberal with the profession. It permits larger deductions, about 25 per cent. of the total income, but the percentage of the rates has been increased by about 3 per cent. Another disadvantage of the new system is threatening, as the officials may demand the right to inspect the business-books, which category also includes the day-books and entries of the doctors. This involves a breach of professional secrecy, and action is now being taken by representative bodies of the medical profession against such a possibility.

Large Grants for Medical Purposes by Lay Philanthropists

"The law of the series" has been verified recently by the fact that within a few days of one another, three men gave large sums of money for charitable purposes, an unusual way of spending money, with us at least. A Mr. Mendel gave $60,000 (300,000 kronen) for the enlargement and extension of the institute for the care of mothers and babies; Mr. Silberer gave large areas in a favorable health resort, now worth over a million kronen, and sure to be worth much more very soon, to be sold in favor of nine charitable institutions in Vienna (the ambulance corps, children's hospitals, cancer hospital and others), and now a Mr. Frankel has given a large country seat, together with a sum of $600,000 (3,000,000 kronen), to the Wilhelminen Hospital to enable poor children, requiring fresh air after disease, such as measles, scarlet fever, diphtheria and the like, to be kept there long enough to be cured. This gift will be most welcome to the Children's Hospital, which received it, as it will end the necessity of dismissing the children to their poorly ventilated homes, where they are liable to become infected with tuberculosis. Now light, pure air and good food are at the disposal of the patients, thanks to a generous tailor, who himself was never a father.

Marriages

CHAUNCEY WYCKOFF HOWELL, M.D., Littleton, Ill., to Miss Mary Augusta Griswold of Princeton, Ill., April 29.

LAWRENCE BRADLEY RARIDAN, M.D., Brookston, Ind., to Miss Hazel Monger of Greenfield, Ind., April 8.

P. A. SURG. MATTHEW H. AMES, U. S. N., to Miss Harriett Rebecca Caulkins of Berkeley, Cal., April 22.

EDWARD FRANCIS WASHBURN BARTOL, M.D., Milton, Mass., to Miss Ethel Chandler of Boston, April 15.

NEIL MACKAY GUNN, M.D., Chicago, to Miss Helen Davis of Minneapolis, Minn., April 18.

Deaths

Chesley Daniel, M.D. Tulane University, New Orleans, 1872; a member of the Mississippi State Medical Association; and Tri-State Medical Association of Mississippi, Arkansas and Texas; for nearly forty years a practitioner of Holly Springs, Miss.; at one time a member of the State Board of Health, and Health Officer of Marshall County; local surgeon of the Frisco System; who fell in February, fracturing his hip, died at his home in Holly Springs, March 2, from heart disease, aged 64.

James Sykes Ely, M.D. Medical College of Ohio, Cincinnati, 1862; a pioneer practitioner of Belmont County, Ohio; assistant surgeon and surgeon of the One Hundred and Twenty-Sixth Ohio Volunteer Infantry during the Civil War; one of the organizers and president of the National Bank of Barnesville, and one of the founders of the Barnesville Gas Company; who fractured his hip a short time ago, died at his home in Barnesville, Ohio, April 10, from senile debility, aged 81.

Frederick Llewellyn Hovey Willis, M.D. New York Homeopathic Medical College, New York City, 1865; for many years a Unitarian minister in Michigan; one of the founders of the altruistic colony, Brook Farm, Fruitlands, Mass., and said to have been the original of the character of "Laurie" in Louisa M. Alcott's "Little Women;" died at the home of his daughter in Rochester, N. Y., April 12, aged 85.

James Scott Todd, M.D. Jefferson Medical College, 1869; a member and once president of the Medical Association of Georgia; emeritus professor of materia medica and therapeutics in Atlanta Medical College; a Confederate veteran; first assistant surgeon-general of the United Confederate Veterans; physician to Wesley Hospital, Atlanta; died at the home of his daughter in Atlanta, April 10, aged 66.

J. Y. Hitt, M.D. University of Louisville, Ky., 1852; the oldest practitioner of Greensburg, Ind.; surgeon of the Seventeenth Indiana Volunteer Infantry, and later of Wilder's Brigade during the Civil War; for thirty years local surgeon of the Big Four System in Greensburg, Ind.; died in his apartments in that city, April 14, aged 82.

William Carden Cousens, M.D. McGill University, Montreal, 1882; F.R.C.P., F.R.C.S., Edinburgh, 1882; one of the best-loved physicians of Ottawa, Ont.; well-known also as a sportsman, musician and philanthropist; one of the founders of and chief physician to St. Luke's Hospital, Ottawa; died at his home, April 12, aged 59.

James Burton McFatrich, M.D. Bennett Medical College, Chicago, 1884; Hahnemann Medical College, Chicago, 1885; who held various public offices and who is said to have amassed a fortune in the manufacture of the patent medicine, Murine; died at his home in Chicago, April 26, from heart disease, aged 52.

Allan Foster Barnes, M.D. Harvard Medical School, 1902; a Fellow of the American Medical Association; city bacteriologist of Cambridge, Mass.; visiting surgeon to the Cambridge Hospital; died in the Massachusetts General Hospital, Boston, March 12, from the effects of an abscess of the throat, aged 38.

Ferdinand J. S Gorgas, M.D. University of Maryland, Baltimore, 1863; formerly dean of the dental department of the University of Maryland; died at his home in Baltimore, April 8, aged 80.

James Robert Reitzel, M.D. University of Tennessee, Nashville, 1892; a Fellow of the American Medical Association, and a highly esteemed practitioner of High Point, N. C.; was instantly killed, April 17, by the overturning of his automobile, while en route to Greensburg, N. C., aged 48.

Warren H. Outland, M.D. Eclectic Medical Institute, Cincinnati, 1873; Hahnemann Medical College, Chicago, 1882; Pulte Medical College, Cincinnati, 1884; formerly mayor, councilman, township clerk and village clerk of Bellefontaine, Ohio; died at his home, January 24, aged 72.

George Rite Kinne, M.D. Syracuse, N. Y., University, 1876; a member of the Medical Society of the State of New York; coroner of Onondaga County since 1910; who was operated on at the Hospital of the Good Shepherd, Syracuse, March 13; died at his home in Syracuse, April 15, aged 60.

Howard Lewis Pratt, M.D. Rush Medical College, 1878; a member of the Illinois State Medical Society and Fox River Valley Medical Association; a member of the staff of the Sherman and St. Joseph's hospitals, Elgin, Ill.; died at his home in that city, April 13, aged 64.

Ernest August Sellhausen, M.D. George Washington University, Washington, D. C., 1874; a Fellow of the American Medical Association; for six years surgeon to the Austrian Embassy in Washington; died at the home of his sister in that city, April 14, aged 61.

Benjamin W. Kimball, M.D. Medical School of Maine, Brunswick, 1857; a resident of Minneapolis since 1869; a specialist on diseases of the eye and ear; died at his home, April 11, aged 85.

George Wallace Dodge, M.D. Northwestern University Medical School, Chicago, 1873; a veteran of the Civil War; died at his home in Menasha, Wis., April 6, from pneumonia, aged 72.

Magnus L. Julihn, M.D. University of Georgetown, D. C., 1866; a practitioner of Washington, D. C., until 1911, died at the home of his daughter in Alameda, Cal., April 4, aged 76.

William K. Armstrong (license, Indiana, 1897), a practitioner of Miami County, Ind., since 1881; died at his home in Peru, Ind., March 30, from cerebral hemorrhage, aged 60.

Henry H. Carpenter, M.D. Albany, N.Y., Medical College, 1859; surgeon of volunteers during the Civil War; died at his home in Lawrenceville, N. Y., March 30, aged 77.

John B. Hoyer, M.D. University of Buffalo, N. Y., 1881; at one time president of the village of Middleport, N. Y.; died at his home in that place, April 3, from nephritis.

Franklin J. Gilson, Jr., M.D. University of Texas, Galveston, 1904; of Brackettville, Tex.; died at the home of his father in Calvert, Tex., April 5, aged 32.

Ransom Dunn Melvin, M.D. Rush Medical College, 1884; for twenty-three years a practitioner of Parker, S. D.; died at his home in that place, April 4.

Isaiah M. Maxwell, M D. College of Physicians and Surgeons, Keokuk, Ia., 1889; died at his home in Excelsior Springs, Mo., March 16, aged 45.

Phillip A. Dent, M.D. University of Louisville, Ky., 1858; and a practitioner of Maysville, Mo., since that time; died at his home, April 7, aged 78.

John David Stookey, M.D. Washington University, St. Louis, 1910; died at his home in Smithton, Ill., April 8, from malignant disease, aged 26.

Abel Brown Applegate, M.D. University of Louisville, Ky., 1870; died at his home near Kosmosdale, Ky., April 1, from locomotor ataxia, aged 63.

Leonidas V. Winston, M.D. Bellevue Hospital Medical College, 1866; died at his home in Knightstown, Ind., April 1, from pneumonia, aged 69.

Walter Everett Scott Preston, M.D. Dartmouth Medical School, Hanover, N. H., 1888; died at his home in Newfield, Me., March 15, aged 53.

Hiram E. Johnson, M.D. Castleton (Vt.) Medical College, 1857; founder of Weston, Ill.; died at his home in Fairbury, Ill., April 6, aged 79.

James A. Harrison (license, Indiana, 1897), postmaster of Spurgeon for about ten years; died at his home in that place, April 5.

Michael Downes, M.D. Missouri Medical College, St. Louis, 1891; died at his home in St. Louis, March 10, aged 48.

Timotheus Taminosian, M.D. Jefferson Medical College, 1895; died at his home in Boston, March 13, aged 52.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

LOWER'S GERMEN PRESCRIPTION

Another Fraudulent Consumption Cure

Marion, Ohio, has the unenviable distinction of being the home of one of the latest of the many cruel frauds that capitalize the credulity and the hopefulness of the consumptive. This is Lower's Germen Prescription, prepared by Lower's Pharmacy. The nostrum is said to be the "discovery" of C. A. Lower, one of the proprietors of the Lower Pharmacy, who emphasizes the fact in the newspaper advertisements that he is a "chemist." While as a pharmacist Lower disgraces an honorable profession, he utilizes the knowledge there learned to avoid technical violation of the federal Food and Drugs Act in putting out his swindling nostrum. The "pure food law" effectually prevents fakers of the Lower type from lying on the labels, but unfortunately its operations do not extend to the newspaper advertisements. As a result Lower can, and does, allow full play to his mendacity when describing his "consumption cure" in the newspapers. Of the many falsehoods told in describing this stuff we quote a few:

GERMEN PRESCRIPTION *Will be sent to any address, Postage Prepaid. If you have friends or relatives elsewhere suffering from Tuberculosis — urge a trial of this wonderful remedy.*

TUBERCULOSIS
AND PNEUMONIA
THE TWO GREAT WHITE MESSENGERS OF DEATH
NEGLECTED WINTER COLDS AND COUGHS
Pave The Way For These TWO DEADLY DISEASES

Facts That Should Prompt Everyone to Overcome Colds Quickly

MANY a medical orator has given the press eloquent written articles on how to stamp out Tuberculosis—but they fail to give warning regarding the seriousness of a neglected cold. If the public fully realized and considered the great number of Tuberculosis cases that originated from slight colds, they would be more careful to seek prompt relief. Colds, then a hacking cough, Bronchitis or Pneumonia, are all the forerunners of lung affection. Though, often not considered serious at the time, a little later when loss of flesh is noticed, when appetite and sleep are impaired, when friends begin to whisper, and the Wise Old Family Doctor Suspicions Tuberculosis — then neglect of a cold causes real anxiety. Hundreds of death certificates that read, "Tuberculosis," are but the result of not promptly eradicating the effects of Coughs and Colds.

ONE OF THE SUREST, QUICKEST WAYS OF ERADICATING COUGHS AND COLDS IS TO USE GERMEN PRESCRIPTION. HUNDREDS OF PEOPLE RIGHT HERE IN MARION KNOW OF ITS SAVING POWER.

ECHOES FROM THE GRAVE

SPECIAL INFORMATION

GERMEN PRESCRIPTION SHOULD BE IN EVERY HOME NOW FOR ADULTS & CHILDREN.

C. A. LOWER, CHEMIST.

Insist upon GERMEN PRESCRIPTION at your Druggist's—and refuse to accept something else claimed to be "just as good." All of Marion's best Drug Stores sell and recommend it. Sold in 50c, $1.00 and $2.00 bottles. Send postage prepaid, anywhere.

THE LOWER PHARMACY

One of the many full-page newspaper advertisements of Lower's fraudulent "consumption cure."

"The most Deadly Foe to the Great White Plague—TUBERCULOSIS—Science Has Yet Produced."

"Its record is perfect."

"Germen Prescription is a Permanent Cure."

"A Genuine Cure for Tuberculosis."

"Its Record of Cures of Tuberculosis is Higher Than Any Other Known Remedy."

These excerpts from newspaper advertisements, which the Federal law does not control, make plain just how far Mr. Lower would go on the labels of his nostrum were they not subject to the healthy restraint of the federal law. Of course there are testimonials. The absolute worthlessness of such testimony is exceeded only by the ease with which it may be obtained, as has been demonstrated time and again. Usually THE JOURNAL waits for a year or two before publishing an article about a fraudulent consumption cure so that it may present to its readers the death certificates of the individuals whose testimonials have been used. As Germen Prescription has been on the market but a comparatively short time, the inevitable has not yet occurred in those cases of true tuberculosis in which patients are relying on Lower's fraudulent nostrum for their recovery. In due time, however, photographic reproductions of the testimonials side by side with the death certificates of those giving them will be forthcoming.

According to Lower "it takes from 15 to 30 large bottles of Germen Prescription to remove the tuberculosis poison." The "large" bottles cost the unfortunate victim $2 each. This probably explains why Mr. Lower can carry full-page newspaper advertisements.

A sealed original package of Lower's Germen Prescription was obtained for analytical purposes and subjected to examination in the Association's laboratory. The label on the bottle, in addition to declaring the presence of 5 per cent. alcohol, gives what purports to be the composition of this nostrum in bastard Latin, thus:

"Herb Menthae peperitae.
"Herb Marrubium Vulgarae
"Ex Balsanum Tolutonum
"Herb Hydrastis Canadensis
"Scillae Maratinia, Mentholis
"Ex Virginianna Prunus
"Ex Capsici Fastiagatum"

This formula reduced to English would read:

Peppermint
Horehound
Extract of Balsam of Tolu
Golden Seal
Squills.
Menthol
Extract of wild cherry
Cayenne pepper.

The quantities of the various constituents are not given, of course, except in the case of alcohol, which the Food and Drugs Act requires. The Association's chemists analyzed the preparation and reported:

LABORATORY REPORT

"Qualitative tests of Lower's Germen Prescription indicated the presence of sugar, menthol, capsicum and traces of alkaloids, probably hydrastin and berberin. Quantitative determinations indicated the presence of 2.93 per cent. of alcohol by volume, 1.83 gm. of menthol and about 0.01 gm. of alkaloidal substance in each 100 c.c. Since the alcoholic content is but 2.93 per cent. appreciable quantities of the balsam of tolu can not be present. Since the recognition of small amounts of horehound, squills and wild cherry in complex mixtures is very difficult no attempt was made to determine the presence of these substances other than by odor and taste. According to Herder (*Arch. Pharm.*, 1906, ccxliv, 120) and to Astolfoni (*Bull. Chim. Farm.*, 1904, xliii, 117) the alkaloids of hydrastis are found only in the rhizome and roots of the plant. According to this the preparation should not contain any alkaloids from hydrastis since the herb of this plant only is claimed to be present. The traces of alkaloid found appear to be a mixture of hydrastin and berberin, thus indicating that the rhizome and roots of hydrastin, rather than the herb, had probably been employed. Whether or not such drugs as horehound, balsam of tolu and wild cherry are present matters little since they are of so little therapeutic value. It is evident that whatever therapeutic value the preparation may possess is due largely to the menthol."

Evidently, therefore, this peppermint-horehound-cayenne pepper-menthol mixture has but one drug present in sufficient quantities to have any therapeutic effect—menthol. It hardly requires medical knowledge to recognize the absolute fraudulence of claiming that this mixture will "cure" consumption. About the only effect that the continued use of Germen Prescription will have, is that of deranging the digestion of the person taking it. This in itself shows the viciousness of the preparation, for it has been well said that the consump-

tive gets well on his stomach. The ability of the tuberculous sufferer to digest food is a necessity if he would successfully combat the inroads of the bacilli.

Summed up then, it may be said that Lower's Germen Prescription will shorten the life of every consumptive who depends on it for his recovery. The only beneficiaries of the sale of this worthless and harmful mixture are the Lower Pharmacy and those newspapers that are willing to share the blood money thus obtained. Of all tainted dollars few are quite so dirty as those wrung by deceit and fraud from the unfortunate but ever-hopeful consumptive.

VALENTINE'S MEAT JUICE

Report of the Council on Pharmacy and Chemistry

Some time ago[1] the Council authorized publication of a report dealing with the composition and claims made for a number of the more generally advertised meat and beef juices. Among these was Valentine's Meat Juice. This it was shown was sold under an incorrect name, the claims for its composition were not truthfully stated and its exploiters made false and misleading claims in regard to its food value. As Valentine's Meat Juice is still widely advertised the referee in charge of this class of products deemed a reexamination of the product advisable. This was made and on it was based the following report which has been submitted to the Council, adopted, and its publication authorized.

W. A. PUCKNER, Secretary.

Your referee has had examined recently purchased specimens of Valentine's Meat Juice. The examination shows that it has virtually the same composition as that given in the report of the Council "Meat and Beef Juices" published in THE JOURNAL, Nov. 20, 1909. It contains practically no coagulable protein material, one of the products characteristic of a meat juice. It is essentially a diluted meat extract.

The following statement found in former circulars now seems to have been eliminated:

> "The two-ounce oval bottle, adopted for the Meat Juice contains the concentrated juice of four pounds of the best beef, exclusive of fat; or the condensed essence of one and a half pints of pure liquid juice which is obtained from the flesh of beef."

An endeavor is still made, however, to convey the idea that the product contains coagulable protein, as shown by the following:

> "Boiling water changes the character of the preparation."
> "The use of boiling water with the Meat-Juice changes the character of the Preparation."

The proprietors undoubtedly know that the product does not contain any coagulable material and that the statements just quoted are plain misrepresentations.

The advertising circular contains a large number of "Testimonials of the Medical Profession." As all are undated, one cannot tell how old these testimonials are. One physician recommends it highly for hypodermic use; another says, "I have kept cases on it and it alone for days, without attempting to give any other food, and the results have been entirely satisfactory." According to another, it is "most invaluable in typhoid fever and also in diphtheria."

Valentine's Meat Juice conflicts with the following rules of the Council:

Rule 1, in that its composition is not correctly given;

Rule 6, in that unwarranted therapeutic claims are made, the profession being led to believe that the product is highly nutritious and is valuable in the treatment of pneumonia, diphtheria and typhoid fever;

Rule 8, in that the name is objectionable, for while sold as a meat juice, in reality it has the character of a meat extract.

Valentine's Meat Juice is a fraud on the public, and in view of its continued exploitation under false claims, the referee recommends that the Council reiterate its former condemnation and authorize the publication of this report.

EDITOR'S NOTE.—The difference between meat extracts and meat juices was fully discussed in the previous report of the Council. Meat "juices" are made by the cold expression of meat with subsequent evaporation, in such a way that the nutritious coagulable proteins remain in solution. In making meat "extracts," heat is used which almost completely removes the coagulable proteins and thus renders it practically devoid of nutrient qualities.

A list of some of the medical journals that carry advertisements of Valentine's Meat Juice, follows:

Pediatrics
Old Dominion Journal of Medicine & Surgery
Medical World
Virginia Medical Semi-Monthly
Medical Times
American Medicine

1. THE JOURNAL A. M. A., Nov. 20, 1909.

Correspondence

"Radiologic Signs" versus Morphologic Defects

To the Editor:—The signs described by Dr. Carman in his article on the "Radiologic Signs of Duodenal Ulcer," (THE JOURNAL, March 28, 1914, p. 980), constitute merely a symptom-complex. In the author's own words, they are "signs" or symptoms, and not *direct evidence* of the lesion itself. Radiologic signs and symptom-complexes for duodenal ulcer are as numerous and varied as the observers who describe them. Compare Dr. Carman's "radiologic signs" with the symptom-complexes described by Holzknecht, Strauss and Kreuzfuchs, and if you think that they agree as to the significance of the various phenomena, read Holzknecht's and Haudek's latest article in the *Fortschritte auf dem Gebiete der Roentgenstrahlen* (xxi, 633).

Dr. Carman's three "major signs" are trifling compared with the direct evidence which he relegates to the third place under "minor signs." All of the cases illustrating his article present definite *direct evidence* of the irregularities characteristic of ulcer of the cap; and it seems like carrying coals to Newcastle to depend on associated functional disturbances of the gastric motor phenomena, when there is such direct roentgenologic evidence of the organic lesion itself.

Included in the title and at the head of the list of signs stands hyperperistalsis. Yet three of the four roentgenograms illustrating the article fail to show more active peristalsis than is observed during the stage of systole in 50 per cent. of normal cases. Therefore as a cardinal point on which to base the roentgenologic diagnosis of duodenal ulcer, hyperperistalsis is an unreliable corner-stone. The case illustrated in Figure 1, which does demonstrate real hyperperistalsis, presented sufficient pyloric obstruction to cause a six-hour gastric retention of three-quarters of the bismuth meal; but there is nothing in Dr. Carman's argument to indicate that the obstruction was caused by a duodenal ulcer rather than by some other organic obstruction. As a case of pyloric obstruction the diagnosis is perfectly obvious.

Residue in the stomach at six hours is frequently present in cases exhibiting no organic lesion of the stomach or duodenum, and *per se* is the least significant finding that I know of.

The appearance illustrated in Figures 5 and 6, termed "residue in the duodenum," may be seen during some stage of the gastric cycle in nearly all cases, especially when the patient is examined in the erect posture. It is similar to Hemmeter's sign, which has led to many erroneous diagnoses of gastric and duodenal ulcer.

The diagnostic value of hypermotility, the first of Dr. Carman's minor signs, is as negligible as that of hyperperistalsis. It is a functional phenomenon that is as characteristic of any one of the long list of lesions referred to by Dr. Carman, as it is of duodenal ulcer. Of what use is it, therefore, as a sign of duodenal ulcer?

In dealing with "a diverticulum of perforating ulcer," Dr. Carman's terminology is ambiguous. If he means an accumulation in the punched-out crater of an ulcer, the finding is of great significance when present, but it is relatively rare. An accumulation in the uninvolved portion of the cap is also a noteworthy finding, but must be differentiated from the chyme in a normal cap at the end of gastric digestion.

The fallacy of depending on the pressure-tender point, which is Holzknecht's chief diagnostic symptom, has been referred to by Dr. Carman previously. It is recalled that in a former communication he defined the locus of the tender point as 3 or 4 inches from the site of the ulcer.

Considering the method which Dr. Carman employs, his percentage of successful diagnoses is remarkable, namely, 135 out of 198. These statistics, however, hardly agree with those of another member of the staff of St. Mary's Hospital, who remarked within a year that 85 per cent. of the Roentgen-ray reports offered no confirmation or disproof of a gastric or duodenal lesion. Moreover, according to Mayo, the Roentgen-ray has given diagnostic aid in only 65 per cent. of their cases of gastric carcinoma. This would seem to leave much that might be attained by the use of serial roentgenography, the remarkable accuracy of which, as a diagnostic method, is fully demonstrated in an article now at press, although I have never claimed 100 per cent. correct diagnoses by this means.

The tremendous amount of work required by Dr. Carman would necessarily prevent his adopting the use of serial roentgenography, but why criticize the method without trying it? His tirade against the negative and positive diagnosis of surgical lesions of the cap is simply a case of history repeating itself. In the early days there was the same opposition to a definite Roentgen diagnosis of fractures and urinary calculi. Where is the surgeon to-day who will treat either of these conditions without the aid of the Roentgen ray? In my experience the patient, the physician and the surgeon want as definite an opinion concerning the presence or absence of a surgical lesion of the stomach and cap as they want in cases of suspected fractures or urinary calculi.

LEWIS GREGORY COLE, M.D., New York.

Holmes, Not Semmelweis

To the Editor:—Your comments on the banquet in honor of Semmelweis (THE JOURNAL, April 11, 1914, p. 1177) are timely. To the disregard of the memories of men who have shed luster on our calling and contributed to the removal of sorrow and pain and death may be traced much of the lack of appreciation now meted out to medical men by the public as manifested in the passage by their representatives of unfairly discriminating laws that humble us and render our calling a thankless one. If we do not honor our own colleagues, if we do not hold up as examples their devotion to humanity at the risk of their comfort, health and life, how can we expect the public to know of their achievements? You well say that "it is a commendable custom thus to keep alive the memory of a physician who has helped by a great discovery to preserve the lives of countless women in the performance of their highest service to the world." It is possible that "Dollinger assumes that Semmelweis was the originator of the theory of the contagiousness of puerperal fever," but the following incidents would render such an assumption highly improbable: In the Section on History of Medicine at the Congress in Carlsbad in 1902 I presented a paper on "Some American Contributions to the History of Modern Therapy" in which I dwelt with pride on the notable discovery of our own Holmes, and said courteously: "Far be it from me to take aught from the man who introduced the idea successfully in Europe. To the unfortunate Semmelweis is given the credit of being the pioneer in urging the importance of prophylaxis in this terrible scourge. When it is remembered that his mind was wrecked by the criticisms he encountered, even the most truth-loving historian must pause ere he would snatch one leaf from the laurel-crowned brow of this self-sacrificing man. Nevertheless, historical justice demands that the claim of an American physician be recognized, whose views antedate those of Semmelweis by five years, as can be established by irrefutable evidence." The latter was presented from the *New England Medical Journal* and compared with the first note in *Hebra's Journal*, which reported the discovery five years later. I was astonished and gratified that not one of the forty-odd teachers of history of medicine who were present questioned this statement, though some others were unsuccessfully attacked. After the session had adjourned I was approached by Dr. György, docent of history in Budapest, and Dr. Neuburger, docent, now professor of the history of medicine in Vienna, with the request to permit them to look over my data. On the following day they returned my manuscript with thanks. In November and December, 1902, my essay was published in German in *Janus*, a journal devoted to medical history, and in February, 1903, in English in the *Therapeutic Gazette*. Two polemic contradictory articles criticizing my data appeared in *Janus* in which Docent von György himself brought out the fact that Semmelweis had not published his discovery until 1861, which made the priority of Holmes over Semmelweis ten years. My last reply to this polemic writer quoted the following from Siebold and Dorn's "History of Midwifery": "Holmes discovered the prophylaxis of puerperal fever when Semmelweis was still a student of medicine," and I closed it by stating that if this work had appeared before my essay was written I should not have deemed it necessary to present the true history of Holmes' achievement before an assemblage of experts in medical history.

A fact never mentioned hitherto is that Semmelweis discovered the value of the nail-brush in what is now called asepsis, and Holmes was the pioneer of the more important discovery.

The interest of THE JOURNAL in this cause may serve to contradict the old saw, "A prophet is not without honor save in his own country." SIMON BARUCH, M.D., New York.

Painless Parturition

To the Editor:—Dr. R. C. Colburn's recommendation of nitrous oxid as the anesthetic of choice in parturition (THE JOURNAL, April 11, 1914, p. 1189) might be worthy of some consideration if the woman alone were to be thought of. This, however, is not the case. The life of the child is of more importance than the comfort of the mother (I do not say her safety), and as the baby born by a mother anesthetized by nitrous oxid requires usually very active resuscitation, and as a much larger number of these babies will fail to respond to the attempt than would ordinarily occur, this anesthetic is contra-indicated in parturition. It is the custom in many hospitals in which nitrous oxid is given preliminary to ether anesthesia to omit the nitrous oxid when operating on women late in pregnancy or in labor.

C. D. DANIELS, M.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PITUITARY EXTRACT AND THE PHYLACOGENS

To the Editor:—In view of the unsettled opinion of the profession on the following questions, I should like to hear from THE JOURNAL.

1. What is the expressed attitude of the eminent obstetricians of this country as to the use of any oxytocic, particularly pituitary extract, in anything like a routine way?
2. Have any bad results on either mother or child been reported from pituitary extract?
3. What is the opinion of the majority of the profession regarding the use of Phylacogen?

R. C. HOLGATE, M.D., Manhattan, Mont.

ANSWER. 1. Obstetricians, "eminent" and otherwise, generally regard the use of an oxytocic as legitimate when indicated. The use of pituitary extract as an oxytocic must be regarded as in the experimental stage.

Yes. Stern,[1] Bagger-Jörgensen[2] and Spaeth[3] report cases of atony of the uterus. Nagy,[4] Spaeth[5], Malinowsky[6] and Lieven[7] report cases of impairment and slowing of the heart-tones and asphyxia of the fetus. Schneider-Sievers,[8] Calman[9] and Voigts[10] report cases of collapse, ringing in the ears and

dizziness. Nagy,[11] Schneider-Sievers[12] and Toepfer[13] report cases of eclampsia. Mackenrodt,[14] Patek,[15] Rieck,[16] Hamm[17] and Heil[18] report cases of contraction of the dilated uterus. Hamm,[19] Voigts,[20] Mackenrodt[21] and Malinowsky[22] report cases of tetany of the uterus, and Voigts[23] reports cases of premature expulsion of the placenta. Rieck[24] reports a case of tetany of the uterus following the use of a pituitary extract and concludes that it is not to be recommended as an oxytocic in the home. E. Herz[25] reports a case of rupture of the uterus under Pituitrin. Grumann[26] reports complications following the injection of Pituitrin consisting of a rectocervical fistula produced by prolonged pressure of the head (for two hours). The mother survived. The child died of sepsis. H. B. Sheffield[27] reports a case of toxic convulsions in the child shortly after birth, in which pituitary extract was used, which disappeared on taking the infant from the breast. He attributes this trouble to pituitary extract which had been secreted in the mother's milk.

Following are the references to the authors quoted:

1. Stern: *Zentralbl. f. Gynäk.*, 1911, No. 31.
2. Bagger-Jörgensen: *Zentralbl. f. Gynäk.*, 1911, No. 37.
3. Spaeth: *Zentralbl. f. Gynäk.*, 1911, No. 37.
4. Nagy: *Zentralbl. f. Gynäk.*, 1912, No. 10.
5. Spaeth: *Zentralbl. f. Gynäk.*, 1911, No. 5.
6. Malinowsky: *Zentralbl. f. Gynäk.*, 1912, No. 43.
7. Lieven: *Zentralbl. f. Gynäk.*, 1913, No. 10.
8. Schneider-Sievers: *Sitzungsber. d. Geburtsh. Gesellsch.*, 1912, No. 1.
9. Calman: *Sitzungsber. d. Geburtsh. Gesellsch.*, 1912, No. 1.
10. Voigts: *München. med. Wchnschr.*, 1912, No. 49.
11. Nagy: *Zentralbl. f. Gynäk.*, 1912, No. 10.
12. Schneider-Sievers: *Sitzungsber. d. Geburtsh. Gesellsch.*, 1912, No. 1.
13. Toepfer: *Sitzungsber. d. Geburtsh. Gesellsch.*, 1912, No. 1.
14. Mackenrodt: *Sitzungsber. d. Gesellsch. f. Geburtsh. u. Gynäk.*, 1911, No. 24.
15. Patek: *Zentralbl. f. Gynäk.*, 1912, No. 33.
16. Rieck: *München. med. Wchnschr.*, 1912, No. 2.
17. Hamm: *München. med. Wchnschr.*, 1912, No. 2.
18. Heil: *Zentralbl. f. Gynäk.*, 1912, No. 42.
19. Hamm: *München. med. Wchnschr.*, 1912, No. 2.
20. Voigts: *München. med. Wchnschr.*, 1912, No. 49.
21. Mackenrodt: *Sitzungsber. d. Gesellsch. f. Geburtsh. u. Gynäk.*, 1911, No. 24.
22. Malinowsky: *Zentralbl. f. Gynäk.*, 1912, No. 43.
23. Voigts: *München. med. Wchnschr.*, 1912, No. 49.
24. Rieck: *München. med. Wchnschr.*, April 9, 1912.
25. Herz, E.: *Zentralbl. f. Gynäk.*, May 17, 1913; abstr., THE JOURNAL A. M. A., June 28, 1913, p. 2072.
26. Grumann: *München. med. Wchnschr.*, July 1, 1913; abstr., THE JOURNAL A. M. A., Aug. 9, 1913, p. 444.
27. Sheffield, H. B.: *Am. Jour. Obst.*; abstr., February, 1914.

3. We are unable to state the opinion of the majority of the profession regarding Phylacogens, as no vote has been taken. Their use has been generally condemned by conservative clinicians. For the opinion of THE JOURNAL, see the following:

"Rheumatism Phylacogen," Queries and Minor Notes, THE JOURNAL, Aug. 10, 1912, p. 464.
Editorial note on McLean, Franklin G.: Death Following the Administration of Phylacogen (Schafer), THE JOURNAL, Feb. 22, 1913, p. 588.

LEVULOSE AND CANE-SUGAR

To the Editor:—The editorial on "The Behavior of Levulose in the Body" (THE JOURNAL, April 18, 1914, p. 1258), states in regard to levulose that "it is a component of one of the commonest of foodstuffs—cane-sugar." While this statement would suggest that levulose is a common impurity of cane-sugar, Puckner says (THE JOURNAL, Sept. 28, 1912, p. 1156) that ordinary cane-sugar, the so-called granulated sugar, almost without exception approaches absolute purity. Or was the phrase referred to intended to suggest that levulose is readily produced from cane-sugar by hydrolysis? If so, I am afraid that the statement will mislead readers. M. F.

ANSWER.—Our correspondent is quite correct in pointing out that levulose is not a common adulterant of, or impurity in, the cane-sugar which is consumed at the present time in the dietary of man. We intended to imply that cane-sugar—and the same is true of beet-sugar, sorghum-sugar or maple-sugar—is readily converted into levulose and dextrose (invert sugar) as the result of the digestive changes which it almost inevitably undergoes in the alimentary tract. This inversion, as it is technically called, of cane-sugar into the two hexose sugars mentioned, may begin in the stomach, owing to the hydrolytic action of any "free" hydrochloric acid present; and it is further easily accomplished by the secretions of the small intestine. There is every reason to believe that cane-sugar is not absorbed, as such, from the alimentary tract, but rather in the form of its derivatives; levulose and dextrose. Strictly speaking, therefore, levulose is a component of cane-sugar only in this potential sense. The inadvertent misstatement in our editorial should therefore be interpreted in the correct sense, as it evidently has been by our correspondent.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 12. Sec., Dr. W. S. Stewart, Suite 404 Citizens Bk. Bldg., Pine Bluff. Homeopathic: Little Rock, May 12. Sec., Dr. I. J. Brooks, 219 East 10th St., Little Rock. Eclectic: Little Rock, May 12. Sec., Dr. C. E. Laws, Ft. Smith.

GEORGIA: Atlanta and Augusta, June 3. Sec., Dr. C. T. Nolan, Marietta.

ILLINOIS: Coliseum Annex, Chicago, May 12-14. Sec., Mr. Amos Sawyer, Springfield.

IOWA: Iowa City, June 11-13. Sec., Dr. Guilford H. Sumner, State House, Des Moines.

KANSAS: Kansas City, June 9-12. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, June 3-5. Sec., Dr. A. T. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 4-6. Sec., Dr. E. L. Leckert, Macheca Bldg., New Orleans. Homeopathic Board: New Orleans, May 4. Sec., Dr. Edward Harper, 702 Macheca Bldg., New Orleans.

MASSACHUSETTS: Boston, May 12-14. Sec., Dr. Walter P. Bowers, Room 159, State House, Boston.

MICHIGAN: Ann Arbor, June 9. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

NEBRASKA: Lincoln, May 27. Sec., Dr. H. B. Cummins, Seward.

NEVADA: Carson City, May 4. Sec., Dr. Simeon L. Lee, Carson.

NEW YORK: May 19-22. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.

NORTH CAROLINA: Raleigh, June 9. Sec., Dr. Benj. K. Hays, Oxford.

OHIO: Columbus, June 2-5. Sec., Dr. George H. Matson, State House, Columbus.

PENNSYLVANIA: Philadelphia, June 1-3. Sec., Mr. Nathan C. Schaeffer, Harrisburg.

SOUTH CAROLINA: Columbia, June 9. Sec., Dr. A. Earle Boozer, 1802 Hampton Ave., Columbia.

TENNESSEE: Memphis, Nashville and Knoxville, first week in May. Sec., Dr. A. B. DeLoach, Memphis.

Nebraska February Report

Dr. H. B. Cummins, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, Feb. 11, 1914. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75: The number of candidates examined was 7, all of whom passed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1912)	80.4
Rush Medical College	(1893)	84.4
Keokuk Medical College	(1906)	77
Cotner Medical College	(1913)	80.5
John A. Creighton Medical College	(1913)	76.5
Omaha Medical College	(1902)	94.6
Bellevue Hospital Medical College	(1892)	86.1

Arizona January Report

Dr. John Wix Thomas, secretary of the State Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, Jan. 6-7, 1914. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 17, including 3 osteopaths, of whom 10 passed, including 2 osteopaths, and 7 failed, including 1 osteopath. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
University of Colorado	(1912)	79.8
George Washington University	(1910)	79.2
Howard University	(1905)	81.7
Northwestern University Medical School	(1909)	81.4
Maryland Medical College	(1904)	†
Marion Sims Beaumont Medical College	(1902)	86.3
Washington University	(1904)	77
Vanderbilt University	(1908)	84
FAILED		
University of Illinois	(1912)	71.7
Indiana Medical College	(1906)	73.1
College of Physicians and Surgeons, Kansas City, Kan.	(1897)	75*
St. Louis College of Physicians and Surgeons	(1905)	69.5
University of the City of New York	(1886)	69.5
Medico-Chirurgical College of Philadelphia	(1913)	75.7*

* Fell below 60 in certain subjects.
† No grade given.

The Quick and the Dead.—There is a dead medical literature, and there is a live one. The dead is not all ancient, the live is not all modern.—Oliver Wendell Holmes.

Book Notices

SCIATICA. A Fresh Study, with Notes of Nearly Seven Hundred Cases. By William Bruce, M.A., LL.D., M.D. Cloth. Price, $1.75 net. Pp. 175, with 18 illustrations. New York: William Wood & Co., 1913.

This is perhaps the most original contribution relating to sciatica which has appeared for some time. The thesis sustained by the author is the rather startling one that sciatica is not a disease of the sciatic nerve at all, but in all cases an arthritis of the hip-joint. The author first quotes extensively from Gowers and Lawson and less fully from more recent writers for the purpose of giving a summary of present opinion concerning sciatica. He then presents his own conception of the disease and quotes very fully from the classic work of Hilton in order to explain why trouble in the hip-joint can cause pain in the knee, down the back of the leg, and in the heel, foot, etc. In other words, he shows that the pain of sciatica is a referred or reflected pain, and he calls to his aid Calder and Reid for the purpose of indicating the routes of irritation. His opinion is based on personal observation of 676 cases, certainly ample material on which to found an opinion, but judging from the notes of these cases, one may say that most of the observations were very incomplete. In 80 per cent. of 125 specially studied cases there were present one or more of the following signs which the author considers indicate involvement of the hip-joint: gout or rheumatism, lumbago, pain on flexion, pain on external rotation, pain on internal rotation, wasting of glutei, incomplete natal folds, and tenderness over the capsule. Bruce further details his method of examination, which in nearly all cases showed involvement of the hip.

For many years it has been maintained by Dr. H. T. Patrick that many cases supposed to be sciatica were really cases of arthritis, and he has found that the most useful maneuver in detecting arthritis is to have the patient lie flat on the back with one leg extended and the ankle of the other side placed just above the knee of the extended leg. With the ankle in this position the knee is then depressed toward the bed or couch. That is, the thigh is abducted, externally rotated and extended at the same time. In arthritis this will nearly always cause pain and there will be found to be restriction of this movement. Bruce does not include this in his various tests. In the book are also descriptions of joint-changes as found by the Roentgen ray (with illustrations), an anatomic appendix and one giving the brief notes of 691 cases. Under the head of treatment, assuming that the trouble is an arthritis, Bruce offers nothing new. The essential parts of the work can be read in half an hour and will richly repay the reader.

FROM THE LETTER-FILES OF S. W. JOHNSON, Professor of Agricultural Chemistry in Yale University, 1856-1896, Director of the Connecticut Agricultural Experiment Station, 1877-1900. Edited by His Daughter, Elizabeth A. Osborne. Cloth. Price, $2.50 net. Pp. 292, with illustrations. New Haven: Yale University Press, 1913.

Medical men often mention with envy the abundant support which agricultural science receives from public funds, contrasting it with the almost total neglect that medical science has struggled under for so long. This envy, of course, does not belittle the value of agricultural science or begrudge its support, but only asks that medicine also receive some aid which it is able so abundantly to repay. The development of agricultural science in America owes more to the prophetic vision and convincing advocacy of one man, Samuel W. Johnson, than to any and perhaps to all other forces. After many years of effort, both by developing the science of agricultural chemistry in his own laboratory and by a persistent campaign of public education, he secured the organization of the first agricultural experiment station in Connecticut in 1877.

In the story of this campaign and in the early struggles to secure recognition of the claims of science from "practical" men, one finds many incidents that strikingly duplicate the experiences of those who are now working for the advancement of the position of medical science in the community at large. His experiences in showing to the public the discrepancies between the advertiser's statements as to the composition of the fertilizers on the market, and the results of actual analyses of these products, recall vividly the work of our own Council on Pharmacy and Chemistry. Also, his reply to the advocates of "experience" as opposed to what they suppose science to be, should become a classic:

"Science is but another and the true name for all that is good in the experience of all men; and bears the same relation to ordinary experience that the clean grain does to the crop in the field, where there is chaff, straw, stubble, roots and weeds. Common experience is the native, rank, but wild growth of knowledge. Science is its trained and cultivated development. Common experience is swaying to and fro with every kind of doctrine, unsettled, unreliable; here asserting a thing, there denying it, now believing, now skeptical. But scientific experience is that whereon one may most surely rest, for it reveals the changeless and perfect laws, in whose obedience Nature glorifies her Author."

Johnson's views are so comprehensive, his insight into his public so keen, and his expression and elucidation so clear, that medical men will undoubtedly find quite as much pleasure and profit in this well-presented compilation of his letters and experiences as will the agricultural chemists. After reading it through, indeed, we wonder if the slow progress of medical science into the public support and service may not be largely because a man has not yet appeared who has been able to do for medicine what Johnson did for the development of scientific agriculture. He had the advantage, however, of touching his public more directly in its most vulnerable and sensitive spot, the pocketbook.

DIE UNTERSUCHUNG DER LUFTWEGE. Ein Vortrag zur Einführung in die Moderne Rhino-Laryngologie für Aerzte und Studierende. Von Dr. P. H. Gerber, A.O. Professor und Direktor der königlichen Universitäts Poliklinik für Hals. Paper. Price, 2 marks. Pp. 45, with illustrations. Wurzburg: Curt Kabitzsch, 1913.

This monograph is devoted to a description and demonstration of modern diagnostic technic as bearing on the upper air-passages. The author finds warrant for such a monograph in the recent important additions made to such diagnostic procedures. This technic is becoming more and more highly specialized, and is demanding much study and experience. Naturally the subjects of greatest interest are those of direct laryngoscopy, bronchoscopy and esophagoscopy. Various methods and instruments employed in these procedures are not only described, but also excellently illustrated. The monograph constitutes a clearly presented and well-illustrated brief account of all diagnostic procedures relating to the upper air-passages.

PHYSIOLOGICAL HISTOLOGY OF MAN AND MAMMALIAN ANIMALS ILLUSTRATED BY MICROSCOPIC PREPARATIONS WITH EXPLANATORY TEXT AND DRAWINGS. By Professor Dr. Sigmund. English Edition by C. Lovatt Evans, University College, London. Part 1: The Skin and Cutaneous Organs and Their Development. Price, $4. Rochester, N. Y.: Ward's Natural Science Establishment, 1913.

Under this pretentious title the authors issue a brief text explanatory of the illustrations, accompanied by a series of microscopic preparations as a supplement. The physiology in this text is rather elementary, and the work would not be seriously impaired in value if the text were wholly omitted, and only the slide and illustrative figures used. The microscopic preparations are really excellent, the material well chosen, and the technical manipulation above criticism.

GERICHTSÄRZTLICHE UNTERSUCHUNGEN. Ein Leitfaden für Mediziner und Juristen. Von Dr. Otto Leers, Königlicher Gerichtsarzt. Paper. Price, 4 marks. Pp. 162. Berlin: Julius Springer, 1913.

This is a clear and concise presentation of the subject of examination of the human body and its tissues and fluids for medicolegal purposes. The work is the result of the author's practical experience extending over many years, and his object in thus formulating his ideas is that they may be of use to others, not only to students of medicine, but also to judges and officers of criminal courts who may have to deal with this class of cases. The latter particularly will here find not only the proper questions to ask the medicolegal expert, but also the answers that may be expected under given conditions.

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Miscellany

Pennsylvania Antivivisection Case

THE JOURNAL last week (Medical News, April 25, 1914, p. 1341) contained an account of the trial of Dr. Sweet of the University of Pennsylvania, and commented editorially (Prosecution of Research Workers, p. 1331) on this remarkable opinion of Judge Bregy:

"I charge you that the law of Pennsylvania does not allow pain and suffering to be inflicted on dogs for any purpose except for the relief of the suffering of the dog itself. They have no right to torture the dog for the purpose of obtaining scientific information."

OPINION OF COUNSEL FOR THE UNIVERSITY

An opinion prepared by the counsel for the university which takes issue with Judge Bregy's consideration of the law, and advises the provost of the university that the work being done is not illegal, has been received. He says:

"The castration of the domestic animals, the playing with game fish on the hook for hours by the fisherman, the trapping of birds and animals for their feathers or furs, or their wounding by sportsmen, and the killing of animals for food by the butcher, are all instances of common customs which have long been in existence and which involve the infliction of pain which could not by any construction be said to be 'for the relief of the suffering of the animal itself.'

"The Act of the Assembly of Pennsylvania of 1855 made it a misdemeanor for a person 'wantonly or cruelly' to maltreat, beat or otherwise abuse any animal or animals belonging either to himself or others. This act was restricted to Philadelphia, but no indictments, it seems, were ever found under it. The act of 1869 provided that 'any one who should, within this Commonwealth, wantonly or cruelly ill-treat, overload, beat or otherwise abuse any animal, shall be deemed guilty of a misdemeanor.' Under this act prosecution was brought in a case in which the defendant had shot at pigeons liberated from a trap, killing one and wounding another. The supreme court held that the defendant could not be guilty of cruelty merely because he had wounded the pigeon instead of killing it, though in this case there was nothing more important at stake than the pleasure of the marksman. In his opinion Chief Justice Paxson said:

"'It is doubtless true that much pain and suffering are often caused to different kinds of game by the unskilfulness of sportsmen. A squirrel, badly wounded, may yet crawl to its hole, and suffer for many hours or days, and die. So with birds. They are often badly wounded, and yet manage to get away only to suffer. It was not pretended that the act applied to such cases.'

"In regard to the wounding or killing of birds by sportsmen, either in the woods or in the traps, it is said by the chief justice that 'they were placed here by the Almighty for the use of man. They were not given to him to be needlessly and cruelly tortured, and were there anything in the finding of the jury to show that the object of this association was to torture pigeons, we would not hesitate to sustain the judgment of the court below. But no such purpose appears, nor is there any finding that the defendant was guilty of needless and wanton cruelty.'

AN ACT GOVERNING VIVISECTION

"If anything further were needed to clinch the view of the chief justice that there is no violation of the law when the pain is inflicted for a lawful purpose, it would seem to be found in the Pennsylvania act of June 3, 1911, authorizing the search of any building in which it is believed that an act of cruelty to animals is being perpetrated, wherein it is said:

"'Provided that no search warrant shall be issued under the provision of this Act which shall authorize any officer, policeman, constable, agent of a society, or other person, to enter upon or search premises where scientific research work is being conducted by or under the supervision of graduates of reputable scientific schools, or where biological products are being produced for the cure or prevention of disease.'"

The opinion of counsel says further that this legislation is believed to be in consonance with the common understanding of the people in regard to the treatment of animals and as to their having been "placed here by the Almighty," as said by the chief justice, "for the use of man." It seems to be a direct authorization, or at least a recognition of the lawfulness, of the proper use of animals for scientific purposes. Counsel further says that it is difficult to see how a scientific man, who does not cause pain wantonly or cruelly, not for the mere sake of causing suffering, or with the wicked intent to inflict injury, which would seem to be the true meaning of the word "wantonly" in this connection, but who carefully avoids causing pain by rendering the animal insensible through anesthesia, and who does it in the investigation of diseases and their remedies, could be regarded as coming within the meaning and intent of the acts quoted above.

From his opinion it can only be concluded that Judge Bregy's statement of what he believed to be the law is in conflict not only with what has been the common understanding of the people of Pennsylvania, but also with the implications, if not the express language, of the act of the assembly of Pennsylvania on this subject, and with a decision of the supreme court of the state.

INTERPRETATION OF DECISION

"In delivering this statement of the law," say the attorneys, "Judge Bregy had not the advantage of argument of counsel, and the opinion of the Pennsylvania lawyers seems to be practically unanimous that it cannot be sustained by the higher courts. The disagreement of the jury will make it impossible for it to be taken to the superior court until after Dr. Sweet is retried. In case the decision stands, however, it would have the most vital effect not only on the advance of medicine in Pennsylvania but on many other activities. If pain can be inflicted on an animal only to relieve the animal's suffering, how is the hunter justified in wounding his quarry; how is the farmer justified in operating on calves, chickens, turkeys or colts to make them better for food or more tractable?

"The most serious consequence, however, would be to check effectively the advance of medical science. In the manufacture and testing of antitoxins and vaccines, the infliction of a certain amount of pain on the lower animals is absolutely necessary. Many diseases such as diphtheria and tuberculosis can be detected in obscure cases only by a test of the secretions of the patient, which includes the use of guinea-pigs. Many valuable drugs such as ergot, which is used to prevent post-partum hemorrhage, can be relied on only in case a sample of each lot manufactured be tested on a living animal.

"It is practically the unanimous opinion of the entire medical profession that without animal experimentation, by far the greater part of the recent advance in medicine, surgery or bacteriology would have been impossible."

APPLICABILITY OF COMMENT TO PRESENT CASE

This, in abstract, is the opinion of the attorneys on this astonishing opinion of Judge Bregy on an important case.

Much of the foregoing comment should not be necessary in this specific instance, since the case as presented by the Anti-Vivisection Society and the prosecuting attorney did not challenge the legality of animal experimentation under the law of Pennsylvania. The accusation against Dr. Sweet was not that he had violated the law in performing operations causing pain to animals in order to obtain scientific information, but simply that, as superintendent of the animal-house, he had not seen to it that the dogs, after operation, received proper quarters, food and medical attention. Judge Bregy, however, not only did not limit the testimony of the prosecution to the specific charges, but went far out of his way to include, apparently, the whole question of vivisection in his astounding statement of what he believed to be the law.

What is Insanity?—What is vaguely called insanity—a term which physicians would gladly leave to the lawyer if he can use it—is really a wide range of greatly differing conditions and diseases all playing havoc with our organ and functions of conduct and behavior. Many too long neglected lines of research enter into it.—Adolph Meyer: The Purpose of the Psychiatric Clinic.

Medicolegal

Antisnuff Act Constitutional—Things of Which Judicial Notice May Be Taken—Tobacco Under the Ban

(*State vs. Olson* (*N. Dak.*), *144 N. W. R. 661*)

The Supreme Court of North Dakota holds constitutional the antisnuff act of that state of 1913, which makes it unlawful to import, manufacture, distribute, or give away any snuff or substitute therefor, under whatever name called, and as defined in this act, which defines snuff as any tobacco that has been fermented, or dried, or flavored, or pulverized, or cut, or scented, or otherwise treated, or any substitute therefor or imitation thereof, intended to be taken by the mouth or nose. The court says the courts can certainly take judicial notice that the use of tobacco in any form is uncleanly, and that its excessive use is injurious. They can take judicial notice of the fact that its use by the young is especially so. Tobacco, in short, is under the ban. This court realizes, of course, that the Supreme Court of the United States refused, in the case of Austin vs. Tennessee, 179 U. S. 343, to hold that tobacco was so much a nuisance as not to be a legitimate subject of interstate commerce. In that case, however, it fully upheld the Supreme Court of Tennessee in holding that it was within the power of the state absolutely to prohibit the sale of cigarettes within its borders when once the original package had been broken, even though the federal Supreme Court refused to take judicial notice that tobacco in the form of cigarettes was more noxious than in any other form.

The courts may take judicial cognizance of the fact that snuff in North Dakota is generally used by holding it between the lip and the gum without mastication, or by plastering it on the gums, and that it is absorbed rather than chewed. Is not the very fact that snuff is generally used by holding it between the lip and the gum without mastication, or by plastering it on the gums, a valid reason for the legislature condemning it, while leaving ordinary chewing tobacco alone? The court believes that it can take judicial notice of the fact that many contend that the use of snuff between the lip and the gum has a tendency to paralyze the nerves of that portion of the face. The court certainly can take cognizance of the fact that the schoolboy can secretly use tobacco in the form of snuff, when he would be liable to be detected in any other form of use. One of the strongest arguments, indeed, in favor of the crusade against the cigarette, is that cigarettes are easily and cheaply obtained, and that the boy is liable to be tempted by that fact, and that the use of tobacco will thus be increased. The same argument is applicable in the case of snuff which is used, not in the nose, but on the gums or between the lip and the gum. So, too, the court cannot be blind to the general fear that drugs and opium are, and certainly can be, easily mingled with snuff, and perhaps are less readily detected in it than in other forms of tobacco.

The modern trend of authority is in favor of the proposition that police laws need not necessarily be omnibus in their character, and that it is permissible to legislate against one form of evil even though many other and similar evils have not been condemned. A beginning must be made somewhere.

Liability for Removal of Sesamoid Bone Without Authority

(*Rolater vs. Strain* (*Okla.*), *137 Pac. R. 96*)

The Supreme Court of Oklahoma affirms, on the appeal of defendant Rolater, a judgment for $1,000 damages for an alleged trespass to the person of the plaintiff Strain by removing a sesamoid bone without authority. The court says that the plaintiff stepped on a nail which penetrated the great toe of her right foot. Inflammation set in, and, the wound not having healed, some sixty days after the injury, her employer caused the defendant to make an examination of the foot. The defendant advised that an operation was necessary to effect a cure, and that the operation should be made by making an incision in the foot or toe so as to drain the joint and remove any foreign matter that might be found therein. In performing the operation, a sesamoid bone was removed. The cause of action was the removal of that bone. It was not claimed that the operation was unskilfully performed, but that the defendant had agreed before the operation that he would not remove any bones from the foot, and that the removal of the sesamoid bone was without the authority or consent of the plaintiff and constituted a trespass to her person and a technical assault and battery. The defendant answered, among other things, that, before reaching the joint so as to drain it, he found it covered with a sesamoid bone which rendered it impossible to drain the joint without the removal of such bone, which was in an unusual place and its presence could not be ascertained by an examination.

In a civil action by a patient against a surgeon for assault and battery, it is not necessary to show that the surgeon intended, by the act complained of, to injure the patient. It is sufficient if it appears that the act was wrongful and unlawful. Consent of the patient, either express or implied, is necessary to authorize a surgeon to perform a surgical operation on the body of the patient. An operation without such consent is wrongful and unlawful, and renders the surgeon liable in damages. Consent, however, may be implied from circumstances. If the contract claimed was made between the patient and the surgeon, the former had the right to insist on a strict performance of it; the removal of the sesamoid bone by the surgeon was without the consent of the patient and was therefore unlawful and wrongful, and constituted a trespass on her person. The defendant had no authority to remove a sesamoid bone from the plaintiff's foot without her consent, either express or implied; she did not expressly consent, and whether or not her consent was implied from the circumstances was a question for the jury to determine under all the evidence.

The court cannot say, as a matter of law, that the sesamoid bone was not within the contemplation of the parties at the time the consent was given to the operation. That question was properly submitted to the jury for determination. Nor will the court hold, under the evidence, as a matter of law, that there was such an emergency existing as authorized the surgeon to proceed in this operation, after the discovery of this bone in an unusual and unexpected place, and to authorize him to remove it without the consent of the patient. Whether or not such an emergency existed was a question of fact under the evidence for the jury. The amount of the plaintiff's recovery, if she was entitled to recover at all, must depend on the character and extent of the injury inflicted on her, in determining which, the nature of the malady to be healed and the beneficial nature of the operation should be taken into consideration, as well as the defendant's good faith.

Township Liability for Emergency Services Rendered to Poor Persons

(*Newcomer et al. vs. Jefferson Township* (*Ind.*), *103 N. E. R. 843*)

The Supreme Court of Indiana reverses a judgment for the defendant, sued by a firm of physicians who in October, 1906, rendered emergency services to a boy resident in the township who fell off a freight train on which he was riding without right, his right leg below the knee and a portion of his left foot being crushed with a consequent copious hemorrhage. The court says that it was the contention of the defendant that townships are not liable for relief to poor or necessitous persons outside of public institutions for surgical or medical aid, however necessitous, irrespective of the circumstances or conditions, unless it is directed by the overseer of the poor; that he is the sole and conclusive judge of the necessity, as to whom he will or will not employ to render aid, and whether or not aid shall be rendered.

It may be conceded, as a general rule, that a claim against a county or township can be founded only on a contract with the proper officer acting under authority of a statute. The Act of 1901 covers the subject of temporary aid. By Section 9746 the overseer is required to see that the poor are properly relieved and taken care of. It then provides for cases of necessity, and for prompt provision of medical and surgical attendance and medicines for all poor in his township outside of public institutions. The law is just as mandatory that the relief shall be given at the expense of the township, as it

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is that the overseer shall provide it. It is therefore the law's mandate in such an emergency as was here shown, which raises an implied liability to one who renders such necessary and prompt service as was here shown, for the reasonable value of the service. It is not a voluntary service, but an obligation imposed by law. When there is an opportunity to communicate with the overseer, or when he can have an opportunity to examine into conditions, then he should be called on.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 22-26.

American Academy of Medicine, Atlantic City, June 19-21.
Am. Assn. of Genito-Urinary Surgs., Stockbridge, Mass., May 15-16.
American Climatological Association, Atlantic City, June 19-20.
American Dermatological Association, Chicago, May 14-16.
American Gastro-Enterological Association, Atlantic City, June 22-23.
American Gynecological Society, Boston, May 19-21.
American Laryngological Association, Atlantic City, May 25-27.
American Laryn., Rhin., and Otol. Society, Atlantic City, June 19-20.
American Medico-Psychological Association, Baltimore, May 26-29.
American Neurological Association, Albany, May 7-9.
American Ophthalmological Society, Hot Springs, Va., May 12-13.
American Orthopedic Association, Philadelphia, June 18-20.
American Otological Association, Atlantic City, May 27-28.
American Pediatric Society, New London, Conn., May 26.
American Proctologic Society, Atlantic City, June 22-23.
American Society of Tropical Medicine, Boston, May 29-30.
American Therapeutic Society, Albany, May 29-30.
American Urological Association, Philadelphia, June 18-20.
Arkansas Medical Society, Eldorado, May 19-22.
Association of American Physicians, Atlantic City, May 12-13.
Conf. of State and Prov. Boards of N. America, Washington, June 19-20.
Connecticut State Medical Society, New Haven, May 20.
Florida Medical Association, Orlando, May 13-15.
Illinois State Medical Society, Decatur, May 19-21.
Iowa State Medical Society, Sioux City, May 13-15.
Kansas Medical Society, Wichita, May 6-7.
Maine Medical Association, Portland, June 10-11.
Massachusetts Medical Society, Boston, June 9-10.
Medical Society of the State of North Carolina, Raleigh, June 16.
Missouri State Medical Association, Joplin, May 12-14.
Nat. Assn. for Study and Prev. of Tuberculosis, Washington, May 7-9.
National Association for the Study of Epilepsy, Baltimore, May 25.
Nebraska State Medical Association, Lincoln, May 12-14.
New Hampshire Medical Society, Concord, May 13.
North Dakota State Medical Association, Grand Forks, May 13-14.
Ohio State Medical Association, Columbus, May 5-7.
Oklahoma State Medical Association, Guthrie, May 12-14.
Rhode Island Medical Society, Providence, June 4.
South Dakota State Medical Association, Watertown, May 26-28.
Texas State Medical Association, Houston, May 12-14.
West Virginia State Medical Association, Bluefield, May 13-15.

INTERNATIONAL SURGICAL ASSOCIATION

Fourth Congress held in New York, April 13-16, 1914

The President, PROF. A. DEPAGE, Brussels, Belgium, in the Chair

Election of Offiers

President of the next Congress, Dr. W. W. Keen, Philadelphia; president of the association, Prof. Charles Willems, Ghent; treasurer, Prof. J. Lorthioir, Brussels; secretary, Prof. L. Mayer, Brussels.

The next meeting will be held in Paris in September, 1917.

Military Surgery: President's Address

PROF. A. DEPAGE, Brussels: The surgery of war owes much to America. In 1861 the sanitary commission appointed by President Lincoln played an important part in the course of events. Since then new duties have arisen with which the surgeons of all countries should reckon. We should be employed in perfecting our sanitary organizations. The international understanding should be reinforced more and more by the organization of help for the victims of war. Without doubt such an understanding already exists, the Red Cross is the most striking illustration of this. At the time of the last Balkan war we saw ambulances which had come from all countries, to repair to the seat of war. The fate of the wounded depends more than all on the aid which is given in the front of the battle, for as long as the engagement lasts the exposed ground is inaccessible for the ambulance men, of whom more than one has sacrificed his life in spite of all precautions taken; thus hours pass during which the men remain without help.

The following is without doubt the solution: Each of the combatants must carry with him side by side with his cartridges the articles necessary for the first dressing. This solution has already been adopted by different countries. The experience of late wars has proved only too clearly that before all the sanitary education of the soldier must be improved. He must realize the dangers of infection by earth, dust and water; he must know that in case of a wound in the abdomen it is better to rest motionless, even for hours, than to walk as far as a station. The military instruction of a soldier in the future will not be complete unless it comprises an acquaintance of the necessary measures to take for his personal safety, and especially the elementary rules of asepsis and antisepsis. The making general of these instructions will result in a great saving of human life. We who are brought in close contact with the dreadful miseries of this poor human race find it more and more difficult to understand why men do not employ their reasoning powers to a good end by ceasing this destruction of one another. We hope soon to see the "United States of Europe" in friendly intercourse with the United States of America," and we reserve our deepest admiration for those who are working to assure universal peace.

SYMPOSIUM ON AMPUTATIONS

Amputations of the Arm and Forearm

PROF. OSKAR WITZEL, Düsseldorf, Germany: The indication for an amputation can be fixed only if one is in touch with all the modern resources capable of assuring the preservation of wounded, diseased and deformed limbs. The introduction into surgery of the antiseptic treatment of open wounds, contusions and fractures by von Bergmann allows the postponement of amputation in time of war as well as in ordinary practice. The processes of suture, resection, anastomosis and transplantation of the blood-vessels enable the preservation of parts of limbs wounded or affected by arteriosclerosis. In cases of suspected wounds, Bier's method of prophylactic hyperemia and his method of hyperemia, together with small carefully made incisions in the suppurating parts, preserve limbs in which septicemia and pyemia would otherwise have demanded amputation. Modern operative orthopedia restores the power of useless limbs by means of osteotomy and musculotendinous transplantation. In cases of simple tumors and even in myeloid sarcoma, excision followed by transplantation is more than ever jusified. Even in malignant tumors the adjunction of roentgenotherapy and chemotherapy allows the hope of a less radical position than formerly. Amputation of itself can never endanger life and should procure for the patient a useful and painless stump. The danger of the actual operation is decreased by increasing the resisting powers of the patient, whether the case is one of emergency or not, by complete arrest of hemorrhage in cases of accident, and by strengthening the heart-action by camphorated oil, saline infusions, inhalation of oxygen, application of heat and respiratory exercise. The choice of an anesthetic, the preservation of warmth during the operation and Esmarch's tourniquet are also important factors. General anesthesia is preferable on account of the psychic effect resulting from amputation. Hackenbruch's process is suitable for minor operations, and Braun's endoneural anesthesia for more extensive removals, always with the addition of narcotics and with strict attention to discipline in the working of the operating-theater. Bier's rachianesthesia will rarely be indicated.

After the operation, life would be saved by simple and thorough asepsis. The section of tissues should be clean; in order not to injure their vitality it is necessary to work with gentleness, heat and moisture. For this end the use of antiseptics must be rejected, and there must be a strict

hemostasia. Cardiac tonics and respiratory exercise judiciously applied prevent thrombo-embolism. To obtain a painless and serviceable stump, clean section should be made well above the nerve-stumps; in disarticulation and epiphyseal amputation, avoiding the opening of the marrow canal prevents the formation of neuritis by fixation of the nerve-roots on the surface of the sectioned bone; sealing the marrow canal by the processes of Bier, Wilms, Ritter or Bunge also prevents this accident. Massage of the soft tissues and early utilization of the stump in temporary prostheses serves the same purpose. For a good utilization of the stump as a lever for prosthetic apparatus, regard must be taken of the unequal retraction of the muscles and tendons. The suture of neighboring muscles and those of opposing ones between themselves helps to maintain the functional equilibrium. Certain tendinous groups, particularly in the forearm, may be transferred into rings covered anew with skin, giving the most life-like prostheses. The creation of levers possessing active movements, and digital autoplasty give hope of remarkable success.

Amputations of the Leg

DR. J. F. BINNIE, Kansas City, Mo.: The level at which amputation of the leg below the knee is performed has no influence on the vital dangers of the operation; hence the choice as to the method and site of such an amputation depends on the lesion for which the operation is required and on the use that is to be made of the resulting stump. No particular improvement has been made in the methods of amputating below the ankle-joint. If gangrene is the occasion for the amputation, the site of operation will depend largely on the extent of the vascular disturbance, and this is determined by the use of Moschowicz's method of examination or by Sandrock's method, which is much simpler. The use which is to be made of the stump is a factor of prime importance in the choice of a site of amputation. If the financial condition of the patient is such that he cannot indulge in a more or less expensive artificial limb, then it is of vast moment to save as much of the limb as possible and to provide him with a good stump; one that will withstand abuse and on which the weight of the body can be supported without harm resulting. The types of these operations are Symes' and Pirogoff's.

If the patient can afford a good artificial limb it is better to amputate at a higher level so that there may be room between the stump and the ground for such an apparatus. The improvements attained in amputations of the leg are all in the attainment of better weight-bearing stumps, and the designs of artificial limbs must in the future adapt themselves to these improvements. Hirsch's and Bunge's aperiosteal treatment of the bony stump in any amputation, and osteoplastic amputations under particularly favorable circumstances, are very valuable means toward obtaining ideal weight-bearing stumps. All the advantages of Bier's operation can be obtained easily and safely by covering the cut end of the tibia with a free transplant of bone.

Amputations of the Leg and Foot

DR. M. DURAND, Lyons, France: Any one of the three middle toes may be amputated by disarticulation of the second phalanx, by metatarsophalangeal disarticulation, or by amputation in continuity of the first phalanx. These operations do not alter the function of the foot. No other operation is recommended. These conditions also apply to the small toe. The great toe is amenable to all operations in continuity or contiguity. Total disarticulation, especially if carried out by the subperiosteal method, gives excellent results. The walk is but slightly affected by the simultaneous disarticulation of the five toes. As to the metatarsal bones, amputation of one of the four last metatarsal bones in continuity or by disarticulation leaves but small difficulty. The disarticulation of the first metatarsus is a little more serious from the functional point of view. It has not, however, the disadvantages ascribed to it. The subperiosteal method is particularly favorable in this case. Not more than two of the metatarsal bones must be amputated. Transmetatarsal and tarsometatarsal amputations, according to Lisfranc, generally give excellent functional results.

Amputations and disarticulations which affect the anterior tarsus without suppressing it entirely must be recommended. Chopart's disarticulation is an unreliable operation; it risks a reversion of the stump and it can, if not entirely proscribed, at least be reserved only for very exceptional conditions. Ricard's operation and subastragaloid disarticulation are both excellent and have practically the same value. The osteoplastic operations on the posterior tarsus (Sebiliot, Pirogoff, Pasquier-Lefort) preserve the normal bearing on the plantar tissues and furnish also very good results. The tibiotarsal disarticulation carried out according to Ollier's subperiosteal method gives supple and enduring stumps. It leaves such good functional results that it may be considered equal to the greater part of the more conservative operations of the posterior tarsus. Of supramalleolar amputations and amputations of the lower third of the leg it may be said that they are of slight mutilation, rendering means of provision of solid skin tissues obtained from the heel; they sometimes permit the direct bearing of the stump extremity on the prosthetic apparatus. They have a usefulness very similar to the tibiotarsal disarticulations because of the length of the leg-lever and the power of the muscles which they preserve. Amputations of the middle third of the leg do not admit of the terminal weight-bearing if performed according to classical methods. There is some hope that the former osteoplastics will improve in their results. Amputations of the leg above the middle part have ceased to deserve the name of "amputation at the seat of election" and should be performed only when the extent of the injuries does not permit of a lesser sacrifice. Larry's intracondylar amputation is preferable to the disarticulation of the knee.

Amputations of the leg and foot owe their gravity solely to the affection which necessitates their performance and to the general condition of the patient. The progress of surgical technic and of asepsis has enabled a more correct adaptation of the stumps to the prosthetic apparatus and a considerable increase of the utilization of these stumps. Prosthetic apparatus in their technical realization have considerably improved the utilization of stumps in amputation of the foot, and especially of the leg. Owing to this progress we can now usefully perform amputations of the middle and lower third of the leg.

Amputations of the Leg and Foot

DR. E. RANZI, Vienna: The most important condition for the portability of the stump is formed by the removal of the excessive formation of callus on the surface of the stump. Bier and Wilms avoid this by closing the marrow-cavity, the former using a flap of periosteum and bone, the latter using sinew; Bunge accomplishes the same result by the removal of the periosteum and endosteum on the lower stump end. The removal of the cut outside portable surface, and the prevention of adhesions between the soft parts and the stump are of less importance for the portability of the stump. Of the methods that are most sought after for portability, that of Bunge seems to be the best, because on the one hand it is the simplest and on the other the results are the best if no *prima intentio* occurs. In every method of operation it is of the greatest importance for the results that the patient take walking exercise and has massage, as well as that he should put his weight on the wooden leg as soon as possible.

Discussion on Amputations

PROF. A. DEPAGE, Brussels: One of the greatest advances of modern surgery in times of war is without question the substitution of more conservative surgery for the brutal amputations formerly in use. On the French side during the Crimean War, in 22,521 wounds of the extremities there were 6,577 amputations; on the side of the English there were 777 amputations in 4,764 wounds; during the Civil War in America there were over 30,000 amputations done, and in the Franco-Prussian War the percentage was still higher. Since the danger of amputation on the battle-field is understood it has become exceptional. The ambulance service in times of

war is often manned by young practitioners impatient for action and eager to perfect themselves in the art of operating. During the Russo-Japanese War, Vreden and Haga interdicted all operation on the field that were not absolutely necessary, and it was not otherwise during the last war at Constantinople. It should be repeated on every occasion that the wounded man in time of war has more right to our protection than any other. The field of battle should not be a field of experience for the surgeon.

The practice of amputation in times of war may be divided into three categories: primary, intermediate, and secondary or tertiary operations. The primary are those necessitated on the field of battle by the extent of the lesion and the imminent peril to life. The immediate treatment of wounds on the field of battle should be limited as far as possible to the prevention of hemorrhage and infection. Applications of iodin dressings and tamponing with 10 per cent. zinc. chlorid solution are useful for this purpose. The intermediate operations are those practiced between the second and ninth day, after the chance of infection has passed. Even then we should not sacrifice a limb on the first manifestation of fever. In our ambulance service in the recent war not a single amputation was done because of suppuration following a wound by a projectile. Most amputations were done because of grave infection following gangrene. The latter was not caused by coagulation, as was formerly thought, but by compression and infiltration produced by the edema due to long marches. Amputation in these cases was not always urgent; sometimes continuous lavage, friction with alcohol and rest in bed would result in the disappearance of the edema. In doing an amputation for gangrene the question was not so much whether to do an osteoplastic or a periosteal operation as how to secure the best nutrition possible. Secondary and tertiary amputations are practiced when the wound is healed and are necessitated especially by deformities, retracted cicatrices, neuroses, etc. Here the surgeon is guided by general hospital practice.

DR. A. LAMBOTTE, Brussels: It is not my practice to use the Esmarch bandage in doing amputations. It renders operation on the thigh long and difficult. In its place I use three or four ligatures to keep the field dry. I clamp both the femoral artery and the femoral vein, and, in addition, it is necessary to ligate two or three of the muscular arteries. There is no bleeding after the operation with this procedure. In amputation of the foot I find the subastragaloid disarticulation of Roux the operation of choice. I have used it in twenty cases with success. The cicatrix is well placed and the shortening minimized. I have had recourse on one occasion to a dermoplastic operation by the method of Keetley for an incurable ulcer of the leg, and secured a perfect result.

DR. ZAHRADNICKY, Memecky Brod: We have had 255 amputations of the larger joints with 23 deaths, or a mortality of 9 per cent. In this series there were 4 transmetacarpal, 5 metacarpal, and 3 amputations of the hand with no mortality; there were 24 antibrachial amputations, with 2 deaths; 25 brachial, with 2 deaths; 4 interscapular, without mortality, making in all 65 operations on the upper extremities with 4 deaths. Of the amputations on the lower extremities there were 60 femoral amputations, with 10 deaths; 70 crural, with 5 deaths. They did 46 femoral operations according to Gritti with 3 deaths; 10 according to Pirogoff's method, without death; one according to Syme, without death; and according to Chopart, 1 amputation, with 1 death; 1 according to Lisfranc, and 1 metatarsal, without death, making 190 cases with a mortality of 10 per cent. The highest mortality was from gangrene, there being 12 deaths in 31 cases of operation, a mortality of 38.7 per cent.

DR. W. H. HUTCHINGS, Detroit: A method which has given me marked success in infected cases is to open freely and make an autogenous vaccine, which is administered as soon as possible. A dressing of 6 per cent. salt and 1 per cent. sodium citrate in distilled water is kept on the wound. This provides continuous drainage, and, together with the increased bactericidal power of the blood due to the vaccines, I believe has saved many lives.

DR. WILLY MEYER, New York: I wish to call attention to the possibility of avoiding amputation, especially in endarteritis in young persons, by means of hypodermoclysis of Ringer's solution by the Ito-Kobar method. Intramuscular injections of from four to five hundred c.c. at each injection have been effective in several cases that have been under my care. If hypodermoclysis is unsuccessful, one may attempt an arteriovenous anastomosis, and, this failing, one may then resort to amputation.

DR. M. L. HARRIS, Chicago: The mortality following amputation is high in the aged for gangrene and the severe crushing injuries involving the thigh. Such amputations should be done under nerve-blocking rather than under general anesthesia, because shock is obviated.

DR. WILLIAM L. ESTES, South Bethlehem, Pa.: The blood-pressure is an important indication as to the advisability of attempting operation. It is useless to operate if the blood-pressure is 80 mm. or lower. When the blood-pressure is above 80 mm. one may operate. This is especially true in crushing injuries. In order to obtain a bloodless field I no longer use constriction, but employ the gradual dissection method, tying off the vessels as I proceed. With this method there is no oozing after the operation. Out of 724 amputations I have done few by the subperiosteal method, but have nearly always used a periosteal flap. Of this number only eighteen came to a second operation from any cause whatever. The nerve should be cut 4, 5 or 6 cm. above the section of the bone. In 42 transtarsal amputations I have used Chopart's operation thirty-six times, and all the patients did well.

(To be continued)

TENNESSEE STATE MEDICAL ASSOCIATION

Eighty-First Annual Meeting, held at Memphis, April 7-9, 1914

The President, DR. W. D. HAGGARD, Nashville, in the Chair

The Drug Habit in Tennessee

DR. LUCIUS P. BROWN, Nashville: The fundamental idea of the Tennessee law has been to restrict the handling of narcotics to physicians and pharmacists for medical purposes only, and to require the keeping of books on the purchase and sale of the drugs. The various other provisions of the law are subsidiary to these central ideas. The three months of operation of the Tennessee law have resulted in uncovering to a rather remarkable degree the prevalence of the disease. Up to April 1 the pure food and drug department has issued 1,403 permits to refill prescriptions, of which very few were renewals of existing permits. It has been estimated that between 1 and 2 per cent. of the population is infected. The books of our department show that of these 1,403 addicts, 1,226 are users of morphin, 97 users of laudanum, 71 of gum opium, 8 of heroin, and 1 of codein. The average dose of the morphin addict is about 8½ grains a day. The aggregate usage is 609 ounces per month, which at the usual retail price of 6 grains for 10 cents would amount to $4,872 per month, or $58,464 per year spent by these registered addicts.

DISCUSSION

DR. GEORGE E. PETTEY, Memphis: Crothers has estimated that 15 per cent. of the members of the medical profession are using drugs. I think that this is entirely too high. I have tried to form an estimate and I am not able to say that more than 3 or 5 per cent. of the medical profession use drugs. Heretofore the greatest difficulty has been to get men self-sustaining after they are put back onto their feet. The slightest ailment will prompt these persons to get more of the drug. No physician should prescribe an opiate for them unless they are in an extreme condition in which its therapeutic impression is absolutely necessary.

DR. F. A. RICHARDS, Sparta: I should like to know what course a physician should adopt with persons who have formed the habit and have been put on their feet again, or who have asserted that they have quit the use of drugs. These persons easily drop back into the habit.

DR. E. T. NEWELL, Chattanooga: Dr. Brown has told us that most of these addicts are produced by the doctors themselves. It is appalling. We should cooperate with the state officials in seeing that the number of the drug addicts in this state is reduced to practically nil.

DR. S. T. HARDISON, Lewisburg: Some restriction ought to be placed on the practice of physicians who take morphin.

DR. L. E. BURCH, Nashville: In cases of acute pain, instead of using morphin or opium, I would suggest that apomorphin be used, 1/40 grain, repeated every fifteen minutes until two or three or more doses are given. You will be astonished at the results you will obtain. I have used it in gall-stone and kidney colic with gratifying results.

DR. L. P. BROWN, Nashville: When the country physician dispenses in such cases—and by dispensing I do not mean bedside administration, but leaving behind a portion of the drug to be taken after the doctor leaves the house—the physician should always make a note of the purchase and how the drug is administered. When a physician dispenses drugs he must keep a record the same as a druggist.

DR. GEORGE H. PRICE, Nashville, introduced a resolution, which was adopted, earnestly endorsing the antinarcotic law of Tennessee and pledging the association to aid the efficient enforcing official, Dr. L. P. Brown, pure food and drug inspector, to the end that the people of the state be prevented from contracting the drug habit and freeing those already addicted from their slavery.

Arteriosclerosis of the Cerebral Vessels

DR. JOHN PHILLIPS, Cleveland: The treatment of cerebral arteriosclerosis is chiefly concerned with the prevention of conditions which lead to its development. Cases of syphilis should have long and thorough treatment. Patients with signs of vascular degeneration should avoid excessive work, alcohol and tobacco. The diet should be light, the bowels kept freely open and moderate outdoor exercises should be indulged in. The advantage of careful attention to the bowels is shown in one of my cases in which the attacks of intermittent closing of the cerebral vessels ceased after thorough catharsis. In the cases of arterial hypertension should nitroglycerin be used? If the diastolic pressure is high and increased systolic pressure is a compensatory measure, to lower the latter under these conditions would simply decrease the blood-flow to the various organs. A low systolic pressure with a high diastolic pressure would be an indication that the former had at some time been higher, and that now the myocardium was failing and digitalis or other cardiac stimulants would be indicated. With our present studies of diastolic and pulse-pressure, the latter being the difference between the systolic and diastolic readings, the field of usefulness for nitrites has been limited to the administration for relief of such symptoms as headache, temporary aphasia and monoplegia or hemiplegia due to intermittent closing of vessels. There is no good evidence that iodids are of value, except in cases of syphilitic origin.

A practical point I should like to emphasize is the practice of massage in the prevention of contractures after hemiplegia. If massage with passive movements is started during the second or third week and continued for months or longer, the troublesome contractures can be prevented. In cases of cerebral hemorrhage in which there are evidences of greatly increased intracranial tension with approaching death, Cushing has advised cranial decompression and in some cases he has attempted to evacuate the clot. The result in some cases has been sufficiently encouraging to warrant further trial.

DISCUSSION

DR. JOHN A. WITHERSPOON, Nashville: I know of no disease of middle life or past middle life with which we come in contact more frequently than those changes in the vascular supply of the brain. Just how much we can differentiate those focal changes, or just how much we may have circumscribed atheroma, is difficult to say. I have always felt that the vast majority of cases of marked atheromatous change before 40 years of age were of syphilitic origin. American life plays a very strong part in bringing about these changes. The majority of cases can easily be diagnosed, and yet many times I have seen cases in which changes in the vascular system of the brain were quite difficult to differentiate from cerebral tumor. We have no explanation of the apparently beneficial effect of the iodids on the arterial system, but we do know that they more frequently help to control the pain of aneurysm; that they frequently act on the vascular system to give comfort. The nitrites we understand, but the iodids we do not, yet I think they are valuable in those cases of arteriosclerosis of syphilitic origin.

DR. H. W. WITT, Nashville: A distinction between the neurasthenic state and the stage of general mental and physical weakness from arterial changes can be made by an observation of the blood-pressure and a careful examination of the heart and peripheral arteries. At the same time, there are peculiarities of mental instability that enable us to make a proper diagnosis. In such cases it is risky to make a favorable prognosis. I agree with Dr. Witherspoon as to the use of the iodids. I have derived definite value from the iodids, not in reducing blood-pressure but in cases with dizziness and slight conscious disturbances.

DR. JOHN PHILLIPS, Cleveland: I believe that the effect of the iodids in arteriosclerosis is very much overestimated. We know from the studies of Longcope and others that 80 per cent. of the cases of aneurysm are syphilitic in origin, and it is in the syphilitic cases that we get the best results from the use of iodids.

(To be continued)

MEDICAL ASSOCIATION OF GEORGIA

Sixty-Fifth Annual Meeting, held at Atlanta, April 15-17, 1914

The President, DR. RALSTON LATTIMORE, Savannah, in the Chair

Officers Elected

The following officers were elected for the ensuing year: President, Dr. W. B. Hardman, Commerce; vice-presidents, Dr. C. L. Williams, Columbus; Dr. F. D. Patterson, Cuthbert; secretary-treasurer, Dr. William C. Lyle, Augusta. Place of next meeting, Macon.

Suprapubic Prostatectomy

DR. W. L. CHAMPION, Atlanta: The majority of operators prefer the suprapubic operation. The approach is easier, the operation more thorough, and the after-results better. On account of the age of the patients suffering with hypertrophy of the prostate, there will always be mortality from operative interference, but if all of the cases are carefully studied and selected for operation, the mortality will grow less, and the functional results will be more satisfactory.

DISCUSSION

DR. EDGAR G. BALLENGER, Atlanta: I would like to emphasize the importance in prostatic work of removing the gland before the patient's health is impaired by back pressure, thus damaging the kidneys. No one thing will lessen the mortality to a greater extent than to remove the prostate before the kidneys are seriously damaged. If the gland is not much enlarged, with residual urine, it is almost certain the patient will have trouble with the prostate. Therefore, I would urge that operation be not postponed beyond a reasonable period.

DR. C. C. HARROLD, Macon: A number of patients with hypertrophy of the prostate unquestionably die without operation. As to the use of the retention catheter, I have had two patients in the last two years where I found the catheter could not be introduced. In both cases suprapubic drainage was instituted for three or four days. In one case the drainage was left in for seven days before operation.

DR. E. G. JONES, Atlanta: A patient with enlarged prostate is said to suffer from renal inactivity by reason of the back pressure, and the relief of this back pressure is apt to be followed by marked depression in renal function, which may be troublesome and cause death.

Anoci-Association Anesthesia

DR. E. C. DAVIS, Atlanta: We have found the local use of novocain solution which Crile recommends very advantageous,

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but the quinin and urea solution often acts as an irritant, causing a tendency to infection or discharge of a serous secretion which is quite annoying to the patient. My experience covers 289 cases, and I believe that it is only the beginning in a line of work which will prove of inestimable value in the future.

Oil-Ether Colonic Anesthesia

DR. JULIAN C. PATE, Valdosta: The advantages of this method of anesthesia over others are: 1. The element of apprehension and fear caused by placing a mask over the face as in inhalation anesthesia is avoided. 2. No expensive apparatus is required. 3. The after-effects of the anesthetic are reduced to a minimum. 4. The more complete relaxation is secured. 5. The limits of safety are widely extended compared with other methods. 6. A more even plane of surgical anesthesia is maintained. I have used this anesthetic in three cases with satisfactory results.

The Management of Pregnancy and Normal Labor

DR. BAXTER MOORE, Atlanta: The care of the pregnant woman should commence as soon as the patient has reason to believe that she has conceived. The patient should be made to feel that her condition is a normal physiological condition. Her mental surroundings should be as cheerful as possible. Labor should take place certainly not later than 282 days after conception. The patient should be allowed time to give birth to her child after labor has been started. Do not use the obstetric forceps if it is possible to avoid the use of them.

The Treatment and Mortality of Cerebrospinal Meningitis

DR. J. E. PAULIN, Atlanta: The basis of this study is the collected results of 72 cases of cerebrospinal meningitis admitted to the contagious wards of the Grady Hospital between April and July, 1913, and eight cases occurring in my private practice. Of the eight cases in my private practice, seven were seen within twenty-four hours of the onset of the disease, with no mortality. The eighth patient was seen seven days after the onset of illness and was dying at the time I was called. The mortality in private cases is lower than in hospital cases because the treatment is instituted much earlier. There is practically no disturbance occasioned the patient by the use of the antimeningitis serum. The character of the spinal fluid and the relation of the meningococci to the pus cells, whether they are intracellular or extracellular, gives some indication of the severity of the infection. Many of the extracellular organisms, after the administration of one or two doses of the serum, generally means a very severe infection, and the chances are that the serum will do little or no good. In the cases where the fluid becomes turbid, the organisms became intracellular and the pus-cells fail to stain as deeply after two or three doses of the serum, the serum should be given until the spinal fluid is free from organisms. Drugs offer very little hope except the relief of symptoms. The mortality depends on two factors: (a) the age of the patient, meningitis being very fatal to children under five years of age and individuals over fifty; (b) the chances of recovery are better when the serum is administered freely. The mortality gradually increases as the length of time increases between the onset of the disease and the administration of the serum.

DISCUSSION

DR. STEWART R. ROBERTS, Atlanta: A valuable point in reaching a conclusion as to the treatment is the necessity for remembering that antimeningitis serum is applicable only in cases of acute cerebral epidemic meningitis. Meningitis may be caused by five different germs. The staphylococcus may cause typical meningitis, and so may the streptococcus. It seems, at times, difficult to differentiate by the clinical symptoms between acute pneumococcic meningitis, which is practically incurable, and acute epidemic cerebrospinal meningitis. It is an easy matter to do a lumbar puncture. The treatment of meningitis at present is practically limited to the cerebrospinal form, and we are more or less helpless in treating the other four forms.

(To be continued)

NEW YORK NEUROLOGICAL SOCIETY

Meeting held March 3, 1914

The President, DR. SMITH ELY JELLIFFE, in the Chair

Paralysis Agitans: Motor Pathology

DR. SMITH ELY JELLIFFE: I have serial sections from a case of paralysis agitans which illustrate the paucity of the fibers in the internal capsule, especially in that group of fibers derived from the development of the cerebello-rubrospinal system. This finding bears on the development of the present-day study of tremors and irregular motor reactions, such as are found in multiple sclerosis, Huntington's chorea, the lenticular degeneration of Wilson, and the group of analogous motor phenomena which have been studied for a number of years and were now regarded as due to disorder or defects in the extra-pyramidal tracts.

DISCUSSION

DR. I. ABRAHAMSON: Cases of tumor of the midbrain involving this region might show a tremor resembling that of paralysis agitans, but it is decidedly coarser and has greater amplitude—almost like a caricature of that of paralysis agitans.

DR. CHARLES L. DANA: According to my experience with paralysis agitans, about 90 per cent. of the cases show the same method of development, they pursue the same course, have the same symptoms, and the prognosis is about the same. If this combination does not constitute a clinical type, then I am at a loss how to describe one.

DR. SMITH ELY JELLIFFE: In the study of the heredity of Huntington's chorea, three distinct trends have been found, namely, the motor phenomena, the mental phenomena and the age factor. These trends might appear in different families, but when the three occur in the same individual, then a typical situation which might be termed Huntington's chorea is present. I regard paralysis agitans in much the same light; it represents a syndrome or combination of factors rather than a clinical entity.

The Relief of States of High Vascular, Muscular and Mental Tension

DR. WILLIAM J. M. A. MALONEY and DR. VICTOR E. SORAPURE: An emotional state is consequent on a physical state; the latter is the immediate source and precursor of the emotion. According to this theory fear develops because the heart quickens; the heart does not quicken because we fear; the tachycardia is the cause of the fear; the fear results from the tachycardia, and we feared because we breathed rapidly and regularly; we did not breathe rapidly and irregularly because we feared; the hurried, shallow, gasping respirations caused the fear; the fear resulted from the hurried, shallow, gasping respiration. Fear without visceral change cannot occur. Absence of visceral change implies absence of emotion. To minimize visceral change is to minimize emotion. Deep breathing slows the heart's action. The changing of hurried, shallow breathing into slow, deep breathing, and the reducing of the heart's rate mitigates or dispels fear. So long as the breathing is controlled and the heart slow, no considerable fear nor excitement can exist. Every emotion, every thought is externalized in muscular action.

I have elaborated for the relief of states of mental and muscular tension certain depressor exercises, which I use as an introduction to the treatment of ataxia by the blindfold method. In tabetics who were practicing these exercises I have observed a fall of blood-pressure, and the patients reported that at home the exercises often led to sleep. In a case of chronic nephritis the exercises led to a fall in the blood-pressure from 220 to 192 mm. in fifteen minutes. Altogether, over 300 observations have been made, and in more than 50 cases the effect of these exercises has been studied.

The exercises might be divided into two groups: breathing exercises and relaxation exercises. Breathing exercises: As we seldom use effort to expire, and often need effort to inspire, expiration is to a great extent a passive, mechanical act, whereas inspiration more often is performed consciously. So

inspiration is usually better controlled than expiration, and much of the trouble in teaching breathing exercises is in training patients to govern their expiration. We first instruct the patient to breathe deeply and to pause at the end both of inspiration and of expiration. The breathing should be abdominal and should be done without jerking. One of the purposes of deep breathing is to distract the patient from obsessing thoughts and disturbing ideas; to focus his attention on the exercises. But deep breathing quickly tires patients. Therefore, after about twelve full breaths, the patient is allowed to pass to breathing of moderate amplitude. All imagery is discouraged. The patient is asked to feel only the passage of air through his nasal cavities and the tactile sensations which arise from the movements of the abdominal wall against his clothes. While he is so practicing, he is cautioned to keep his attention on the sensations which accompany his breathing. After a few minutes of "medium" breathing, the patient is taught to breathe quietly, and to attend only to the accompanying sensations. A bag of sand or shot or other heavy object placed on the abdomen is useful to increase the muscular effort involved in breathing, so that breathing, during the exercises, might not easily lapse into an unconscious act. Instead of the sand-bag, the physician's hand may be used.

Relaxation exercises: To relax the muscles, passive movements in which the muscles were alternately lengthened and shortened are employed. The scalp, forehead, cheek and jaw muscles of the recumbent patient are passively moved by the physician, and this is continued until wrinkling diminishes or disappears and muscular spasm is eliminated. Next, a shoulder is relaxed; then an arm. Each joint is moved passively until all trace of muscular tension vanishes. All movements should first be made passively by the physician, and then, where possible—limbs, head and trunk—passively induced by the action of gravity.

The effects of breathing and relaxation exercises: Besides the tranquilizing of excited and anxious states, and the general relaxation of the musculature, certain other physiologic effects result. During the exercises a high blood-pressure almost invariably falls. Not only in organic renal diseases, but also in cases of high blood-pressure in which no renal disease could be detected, a fall occurred. A reduction of from 25 to 30 mm. in the systolic blood-pressure, as a rule, results from the exercises, and even greater reductions occur. This fall in blood-pressure was observed not only in cases of high pressure, but also in normal people, among whom a fall of from 10 to 15 mm. was customary. The fall, as a rule, affected almost equally the systolic and the diastolic pressure in normal people, and sometimes there was an equal fall in the systolic and diastolic pressure in persons with organic disease, but in those in whom the blood-pressure was abnormally high, the systolic pressure usually fell to a greater degree than the diastolic.

Psychologically, the exercises produce concentration of attention and restriction of consciousness. The physiologic effects are relaxation of the voluntary muscles, diminution of muscular reflexes, slowing of the pulse rate, a tendency to reestablish in the pulse the normal rhythm in time and volume, lowering of blood-pressure, and a tendency to restore the normal pulse pressure. The exercises should last about twenty minutes at first. If they were continued longer, the patient grew restless.

Therapeutic applications: These exercises were originally devised as an aid to the reeducation of the ataxic tabetic. Obviously, they were applicable to all cases in which the relief of high vascular, muscular or mental tension was desired. They were therefore taught in cases of high blood-pressure, of muscular spasm, of insomnia and other neurasthenic symptoms.

DISCUSSION

DR. WALTER TIMME: I do not think the theory that the rapid heart action produced the fear is susceptible of proof, but rather the converse. For example, take a cat and give it sufficient atropin to diminish the auto-activity that has control over the heart's action, a sudden fright would fail to produce rapid heart action, but still the animal would be frightened. Fright may produce blanching of the skin and diarrhea, due to stimulation of the autonomic nerve ends. In other words, the results of two factors are interwoven, the two factors being the sympathetic and the autonomic systems. Referring to the blood-pressure, while in certain cases its reduction might prove beneficial, in other cases the high blood-pressure may be compensatory, and its reduction would prove injurious. With a productive inflammation of the kidney, a high blood-pressure is a purposeful action, and by reducing it the kidney cannot functionate properly. With functional conditions, of course, the reduction of a high blood-pressure is beneficial, but to attempt to reduce it below its physiologic limits is of doubtful efficacy.

DR. RICHARD B. KRUNA: I have employed exercises similar to those described in the reeducation treatment of infantile paralysis for the past eight years, also in the treatment of cardiac neuroses, in conditions of disturbed innervation of muscular tissues, of increased muscular activity, such as we find in convulsive tics and in neurotic tachycardia, and I can subscribe to the fact that by this method we can establish greater regularity of the heart's action, and that in infantile paralysis it improves the innervation of the muscles that are affected by the paralysis springing from certain segments of the cord.

DR. SMITH ELY JELLIFFE: I am glad to hear emphasized the value of the psychic element in connection with this method of treatment. I believe, however, that the authors will have to relinquish their contention that fear is consequent on the quickened heart's action. If anything has been shown by the recent work on the sympathetic nervous system, it is that the James-Lange theory failed fully to account for these phenomena, and that after all we are not afraid because our hearts beat, nor do our hearts beat because we are afraid, but that these phenomena are the result of interrelatory phenomena operating through the sympathetic and the autonomic nervous system.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

April, CXLVII, No. 4, pp. 469-624

1 *Cholecystitis without Stones or Jaundice in Its Relation to Chronic Pancreatitis. W. J. Mayo, Rochester, Minn.
2 *Treatment of Pylorospasm in Infancy. J. Ruhrah, Baltimore.
3 Tuberculosis of Spleen, Septic Infarction, Polycythemia, Splenectomy. J. Douglas and A. B. Eisenbrey, New York.
4 Giant Tumors of Conus and Cauda Equina. J. Collins and C. A. Elsberg, New York.
5 Cases of Hypotension Associated with Definite Symptomatology. E. H. Goodman, Philadelphia.
6 Significance of Diastolic and Pulse-Pressure. P. Nicholson, Ardmore.
7 Action of Certain Anilin Dyes on Bacterial Development. C. E. Simon, Baltimore, and M. A. Wood, Houston, Tex.
8 *Diagnostic Value of Percutaneous Tuberculin Test. E. B. Krumbhaar and J. H. Musser, Jr., Philadelphia.
9 *Successful Removal of Hemangio-Endothelioma from Dura of Frontal Region of Brain. T. Diller and R. T. Miller, Jr., Pittsburgh.
10 *Total Non-Protein Nitrogen of Blood in Pregnancy and Eclampsia. C. B. Farr and P. F. Williams, Philadelphia.
11 Prolapse of Ovary; Its Rational Management. C. D. Palmer, Cincinnati.
12 Precocious Development of External Genitals Due to Hypernephroma of Adrenal Cortex. H. D. Jump, H. Beates, Jr., and W. W. Babcock, Philadelphia.
13 Symptoms Suggesting Pituitary Disorder. E. D. Bond, Hathorn, Mass.
14 Value of Auto-Inoculation in Pulmonary Tuberculosis. H. L. Barnes, Wallum Lake, R. I.
15 Early Symptomatology of Cancer of Esophagus. H. H. Janeway, New York.

1. Cholecystitis without Stones or Jaundice.—In this paper Mayo endeavors to show that in the presence of chronic pancreatitis without jaundice and without evidence of back pressure on the biliary tract the gall-bladder should be removed if it shows marked evidences of chronic cholecystitis, especially the strawberry type. In at least a half-dozen cases

operated on in the Mayo clinic the following sequence has occurred: cholecystostomy had been done for chronic cholecystitis without stones and with a complicating chronic pancreatitis. The patient was relieved for some weeks or months and then the symptoms returned. Recognizing the need of more prolonged drainage the gall-bladder was reopened and drained for a considerable period. There was complete relief so long as drainage of the gall-bladder continued, but sooner or later, after the fistula in the gall-bladder healed, the symptoms returned. It has been Mayo's experience that removal of the gall-bladder promptly relieves the symptoms and permanently cures the patient.

Chronic pancreatitis, the result of gall-stone disease, is usually cured by the removal of the stones and drainage of the biliary tract and in the chronic infections of the gall-bladder with secondary involvement of the pancreas, in the absence of interference with biliary drainage, cholecystectomy furnishes a satisfactory symptomatic cure.

2. **Treatment of Pylorospasm in Infancy.**—The points to which Ruhräh particularly calls attention are: 1. A more careful diagnosis. 2. A longer trial at medical treatment, especially in all cases in which the diagnosis of pylorospasm is probable. 3. The necessity of the use of breast milk. 4. The superiority of atropin to other forms of medication.

8. **Percutaneous Tuberculin Test.**—In 76 unselected non-tuberculous cases tested by Krumbhaar and Musser only 5 failed to give a negative reaction, and in only 2 of these was the Moro positive. Of 24 cases in the first two grades of pulmonary tuberculosis all reacted positively, indicating as is generally accepted, the specificity of the reaction. Of 10 cases of far-advanced pulmonary tuberculosis, 9 reacted negatively and 1 doubtfully positively. Of 10 tuberculous cases other than pulmonary all reacted positively. Of 28 clinically doubtful cases, by the Moro test 7 reacted positively, 6 doubtfully and 15 negatively. In the 16 cases in which von Pirquet tests were also made, 9 negative Moro cases gave 7 positive and 2 doubtful von Pirquets, while 1 doubtful Moro gave a positive von Pirquet. The others tallied with the Moro test.

In the light of these figures reinforced by the opinions of others, Krumbhaar and Musser believe to be erroneous the prevalent opinion that positive reactions in adults are of little or no value. The constantly positive reaction in all undoubted early and moderate cases of tuberculosis is a strong indication of the specificity of the reaction. The negative reaction in 90 per cent. of the far-advanced cases indicates that after bodily resistance has been overcome, with the probable disappearance of antibodies, the tissues fail to react to the test. As well as in pulmonary tuberculosis the test is of value in the differential diagnosis of pleural effusions, joint diseases, abdominal tuberculosis versus typhoid, etc. A general anaphylactic reaction, according to Chiaravallotti, as shown by an increase in the number of leukocytes in the peripheral blood following application of the test, is not demonstrable. The test may be repeated on the same patient without alteration of the results. Although in this series the results were in every case the same, rare instances have occurred where repetition produced a different result.

9. **Tumor of Frontal Region of Brain.**—This case Diller and Miller say was interesting from several points of view. Here was a growth of fair size which produced none of the well-known symptoms of brain tumor, but which manifested itself chiefly by Jacksonian epilepsy involving the left arm and by a slowly progressive hemiplegia. This tumor, situated just anterior to the right motor cortex and lying between the falx and frontal lobe would naturally be expected to produce symptoms referable to the trunk and leg rather than the arm. Yet from the onset there appeared to have been convulsions of the muscles of the upper abdominal wall accompanying those of the arm while the leg itself was never involved in convulsions.

The authors were somewhat led astray in supposing the lesion chiefly located in the arm center. The movements in the epigastric region they found difficult to interpret, since they occurred with only two or three of the arm convulsions; moreover, they had the patient's history that similar attacks had occurred over a period of many years running back to childhood. They were, therefore, disposed to eliminate these attacks from consideration as evidence pointing to localization of the lesion. Even now it is difficult to interpret them. If one considers these early epigastric convulsions indicative of a lesion in the frontal cortex involving the adjacent center for the trunk, there is great difficulty in explaining the long history, the disappearance of these convulsions for several years and their subsequent reappearance with the onset of trouble in the left arm. The patient also described these epigastric movements as definitely limited to that region of the body and it was felt that this manifestation, whatever it indicated, was probably not related to the arm convulsions and hemiplegia.

This case also illustrates the practical point that a tumor may declare itself in an irregular and unusual manner. Besides the absence of general symptoms of brain tumor, the Babinski toe reflex and ankle-clonus, which one might expect to find, were both absent in this case. The knee-jerk, however, was distinctly increased as compared with its fellow, and was a diagnostic sign of considerable value.

10. **Nitrogen of Blood in Pregnancy.**—Farr and Williams found by testing that in normal pregnant women the total non-protein nitrogen does not usually exceed 30 mg. per 100 c.c. of whole blood. In general hospital cases without demonstrable renal lesions it may frequently reach 40 mg. or more. Slighter disturbances of function are therefore more clearly defined in the former class. In all cases of pregnancy in which there was definite renal insufficiency or eclampsia, with one exception, there was always a slight and in most cases a considerable increase in the total non-protein nitrogen. The degree of retention was similar to that found in parenchymatous nephritis rather than the higher grade common in the interstitial variety. It bore no definite relation to the severity of the symptoms. In only one case did the figures reach a height which, according to Strauss, would suggest a dubious prognosis. This patient died; another, with much less retention, also died.

The relatively normal elimination of phthalein in some cases of eclampsia and the markedly lowered excretion in some clinically normal cases deter the author from drawing conclusions as to its real diagnostic or prognostic value. The presence of a rising blood-pressure, the condition of the urine as regards albumin and casts, and the clinical picture the authors believe are severally more important than either of the newer methods they have employed. Further experience may modify this view, for Widal considers the examination of the blood of greater prognostic, if not diagnostic value, than the examination of the urine.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

April, LXIX, No. 4, pp. 581-752

16 Rôle of Abdominal Cesarean Section in Treatment of Eclampsia. R. Peterson, Ann Arbor, Mich.
17 *Serum Diagnosis of Pregnancy by Dialysation Method. C. F. Jellinghaus and J. R. Losee, New York.
18 Needlessness of Combined General and Local Anesthesia. B. C. Hirst, Philadelphia.
19 *Aqueous Solutions of Iodin in Treatment of Gonorrhea in Women. H. J. Hartz, Philadelphia.
20 America's Contribution to Gynecology. E. T. Abrams, Dollar Bay, Mich.
21 Mechanism of Labor from Standpoint of Comparative Anatomy. E. A. Schumann, Philadelphia.
22 Well Authenticated Case of Sarcoma of Placenta. W. H. Cary, Brooklyn.
23 Case of Monstra Per Defectum. G. R. Smith, Mount Vernon, Wash.

17. **Serum Diagnosis of Pregnancy.**—Jellinghaus and Losee do not recommend the dialysation method for diagnostic purposes. It is entirely a laboratory procedure, the many sources of error make it absolutely unsuited for an office test, although the little box containing the reagents, etc., put up by a well-known drug firm would lead one to believe that it is. The box contains two dialysers, powdered placental albumen, etc. The powdered albumen is absolutely useless, as the authors have convinced themselves by personal trial.

They state that it seems a pity that such an outfit should be put on the market, for it will make many believe that the test is easy. If the outfit is generally used the literature will soon be crowded with positive and negative results equally devoid of value.

19. **Iodin Treatment of Gonorrhea in Women.**—In gonococcal infections of the lower genital tract, Hartz says iodin is a valuable agent in the treatment. It offers a more rapid, more thorough, and a more permanent improvement in the patient's condition than most other methods commonly in use. Gonococci disappear early from the secretions; intrapelvic extension is far less frequent; the use of the cautery and strong caustics is obviated and hence less scarring results. The constitutional condition of the patient improves as a result of the early cessation of the profuse discharge. The rapid improvement and lack of pain noticed by the patient encourages her to continue with the treatment. The entire course of treatment is of comparatively short duration, and but little burdensome to the patient and physician, and lends itself readily both to dispensary and private practice.

Of twenty-five cases that comprise Hartz' series, eighteen patients were cured, after treatment from four to ten weeks. Two of the remaining seven cases were markedly improved but still showed a few gonococci in the discharges from the cervix, the source of which, in all probabilities was reinfection from the husband, who also had gonorrhea, or possibly from the Fallopian tubes with patulous uterine orifices discharging the contents into the uterine cavity and hence through the cervix, or from the deep cervical glands beyond the reach of local medication. Of two patients who complained of intrapelvic symptoms, prior to the commencement of treatment, both were subsequently operated on for chronic salpingo-oophoritis, though the local condition of the lower genital tract had cleared up. The other three cases that showed improvement were under treatment from four to five weeks but drifted away from view and treatment was discontinued. One patient developed symptoms of intrapelvic involvement shortly after applications were begun, but with expectant treatment and rest in bed, her condition soon improved. Three of the eighteen patients that were cured had abscesses of Bartholin's gland which required incision and drainage.

The dilatation of the urethra by means of Hegar's dilators with light massage of the follicles over the dilator and with subsequent instillation into the uretha of the following solution: iodin (crystals), gr. v; albolene, oz. i, greatly enhanced the restoration of the parts to normal. The solution was retained in the canal from three to five minutes. The dilator if covered with Finger's ointment is also of value in these cases. Under the above outlined treatment the thick and copious yellow discharge soon disappears and is replaced by a thin whitish watery secretion in which gonococci are absent. A solution of zinc sulphate and alum one teaspoonful of each to two quarts of water used as a douche twice daily helps to limit the latter discharge.

American Journal of Orthopedic Surgery, Philadelphia

January, XI, No. 3, pp. 367-540

24 Treatment of Tubercular Coxitis. R. Werndorff, Vienna.
25 Osteomyelitis at Sacroiliac Joint with Gas-Bacillus Infection. S. M. Cone, Baltimore.
26 Use of Celluloid Foot Plates. E. S. Geist, Minneapolis.
27 Recumbency in Treatment of Pott's Disease. G. B. Packard, Denver.
28 Pathology of Tabetic Arthropathy. L. W. Ely, Denver.
29 Cervical Rib. Report of Thirty-One Cases. M. S. Henderson, Rochester, Minn.
30 Joint Syphilis. A. O'Reilly, St. Louis.

American Journal of Public Health, Boston

March, IV, No. 3, pp. 179-288

31 Occupational Diseases and Legislative Remedies. J. B. Andrews, New York.
32 Relationship of House-Fly to Disease. D. B. Armstrong, New York.
33 Midwives in America. C. C. Van Blarcom, New York.
34 Meaning of "Faith Cures" and Other Extra Professional "Cures" in Search for Mental Health. W. A. White, Washington, D. C.
35 Prevention of Carriers. W. A. Sawyer, Berkeley, Cal.

Archives of Pediatrics, New York

March, XXXI, No. 3, pp. 161-240

36 Infants' Milk Stations: Their Relation to Pediatric Clinics and to Private Physician. S. J. Baker, New York.
37 *Experiment in Collection of Human Milk for Hospital and Dispensary Uses. B. R. Hoobler, New York.
38 *Simple Method of Preparing Albumin Milk. B. R. Hoobler, New York.
39 Observations on Milk-Station Infants. M. S. Reuben, New York.
40 *Study of Child in Tuberculous Milieu. M. Fishberg, New York.

37. **Experiment in Collection of Human Milk.**—The experiment on which Hoobler reports was planned and carried out to answer the following questions: 1. Will mothers sell their surplus milk? 2. Can such milk be purchased without injury to the infant on the breast? 3. What price would have to be paid for the milk in order to secure it? 4. How much extra machinery would have to be set in motion in order to collect it? The results are summed up as follows: 1. Mothers are perfectly willing to sell their milk. 2. Certain mothers can spare a portion of their milk without detriment to their own child. 3. Human milk can be purchased at a reasonable price. 4. Its collection can be accomplished without additional machinery than may be found in connection with any well organized Social Service Department. 5. If needy mothers are chosen to furnish the milk a double charity is performed, viz., a struggling mother is helped to support herself and child, and sick babies are furnished with the best food known.

38. **Simple Method of Preparing Albumin Milk.**—The method described by Hoobler is as follows: Take 1 pint of fat-free buttermilk and add to it 1 pint of warm water, to which has been added 10 grams of powdered casein. This will make 1 quart of fat-free albumin milk. If it is desired to have an albumin milk containing more fat, instead of using fat-free buttermilk use artificial buttermilk made from whole milk. After the casein suspension has been added the milk can be bottled and put on ice until ready to use. The thick smooth buttermilk will hold the finely divided particles of casein in a very even suspension, and allow same to pass through the nipple without blocking, and will stand for sometime without settling to the bottom of the bottle. The formula of the albumin milk made from the fat-free buttermilk is: Protein, 2.8 per cent.; fat, 0.25 per cent.; carbohydrate, 2 per cent. The formula of the albumin milk made from the whole milk buttermilk is: Protein, 2.8 per cent.; fat, 1.75 per cent.; carbohydrate, 2 per cent.

Metabolism studies have been made on children fed on this modified albumin milk, and the absorption and retention of nitrogen was in practically the same proportions as when fed on the original albumin milk. This casein flour costs 40 cents per pound, and is sufficient to make 44 quarts of albumin milk. To make the same amount from moist casein curd would require the use of 22 quarts of milk. It would seem from the foregoing that albumin milk made from casein flour accomplishes in every particular the things expected of the albumin milk made up from fresh casein curd.

40. **Study of Child in Tuberculous Milieu.**—The children in 217 families, in which either the father or mother, or both, were found tuberculous, were investigated by Fishberg. They were found living under conditions greatly favoring the dissemination of the disease. Of 274 consumptives found among these people, only 112 slept in a separate room, and 136 slept in beds by themselves; the rest shared their rooms, or beds or both, with other persons. Inasmuch as these children were burdened by both a deleterious environment and a tainted heredity, they offered splendid material for the study of the effects of the tuberculous milieu on children.

Of the 1,129 persons comprised in this group of families, 792 were under 15 years of age. Nearly all of these children were reared on breast milk, only 5.5 per cent. having been brought up on artificial feeding. The proportion reacting to tuberculin was not found to have been influenced by the manner of feeding during infancy. Some mothers suffering from active tuberculosis were found suckling their infants and the latter apparently thrived as well as others of their class; many, however, infected them with active tuberculosis. The weight of the infants was fairly normal, but the chil-

dren over 4 years of age were deplorably short of weight when compared with others of their class. During the six months they were kept under observation, one-half remained stationary in weight, 40 per cent. had lost and 10 per cent. had gained in weight. In 8 per cent. of the children enlarged superficial thoracic veins were found. In children in whom a diagnosis of tuberculosis was made, 37.5 per cent. showed these enlarged veins and three-fourths were unilateral. Of the children showing signs of latent tuberculosis, 25 per cent. had enlarged thoracic veins.

The cervical glands were swollen in 67.8 per cent. of the children; swollen glands in the axilla, groin, etc., were exceedingly rare. Only one child was found with enlarged supraclavicular glands, and it had other symptoms and signs of tuberculosis. Hyperplastic conditions of the nose, throat and pharynx, such as enlarged tonsils, adenoids, chronic rhinitis, etc., were found in 58.6 per cent. of the children. Scrofula was rather infrequent. The external stigmata of tuberculosis, such as scrofuloderma, tuberculides, phlyctenula, glandular blepharitis and conjunctivitis, keratitis, etc., were exceedingly rare among these children.

The cutaneous tuberculin test, applied twice and three times to those who reacted negative to the first application, was found positive in 7 per cent. of infants between 1 and 6 months of age. Between 6 months and 1 year of age 21 per cent. of the infants reacted positively. The percentage of positive reactions keeps on increasing with advancing age, and at fourteen years 83.79 per cent. were found infected with tuberculosis. Among the 692 children, 65 were found to be suffering from active tuberculosis. Of these 13 had tuberculosis of the bones and joints, 4 Pott's disease, 2 spina ventosa, and one tuberculosis of the glands. With active pulmonary tuberculosis, 19 children were found, and 25 with tracheobronchial adenitis. The mortality of children under 14 among these families was rather high. Of 188 children under 6 who died, 30 succumbed to meningitis, i. e., 16 per cent., of all the deaths of children under 6 years of age were due to meningitis, which is enormous when compared with the 2 per cent. of deaths due to this cause among the general population. While only 17, or 7.3 per cent., of all the deaths were said by the mothers to have been due to pulmonary tuberculosis, it must be borne in mind that in 79 cases the parents stated that the deaths were due to unknown causes.

Boston Medical and Surgical Journal

April 16, CLXX, No. 16, pp. 601-636

41 *Problems in Nephritis. H. D. Arnold, Boston.
42 Importance of Diagnosis and Treatment of Primary Syphilis. C. M. Smith, Boston.
43 Case of Bone Cyst of Os Calcis. W. P. Coues, Boston.

41. **Problems in Nephritis.**—Cases of nephritis Arnold claims do better on a low protein diet, which requires less functional activity on the part of the kidneys. The degree to which the protein should be cut down depends on the degree of impairment of the renal functions. A rough estimate can be made on the basis of allowing 90 grams of protein in the lightest cases and about 40 grams in the severe or advanced cases. Intermediate grades should have an amount of protein between these extremes, varying according to the severity of the disease. If the symptoms improve and the blood-pressure falls, the functional tests are not essential; otherwise valuable information may be obtained from them, even in the present stage of our knowledge. With the accumulation of more data, the inferences that may be drawn from these functional tests will be more and more valuable. In cases with edema, and also in the cases in which the blood-pressure remains high although the protein in the food is reduced, the amount of salt should be reduced.

As a result of further study Arnold is convinced that we shall undoubtedly divide cases of chronic interstitial nephritis into at least two or three clinical types. A better understanding of these cases and a more careful study of the problems of nephritis will lead to more intelligent treatment and resulting benefit to the patient. A proper regulation of the diet—not forgetting to provide a sufficient amount of nutrition—will, he says, enable many of these patients to live in comfort for years longer than we have been taught to expect.

Bulletin of Johns Hopkins Hospital, Baltimore

April, XXV, No. 278, pp. 101-132

44 *Clinical Method of Studying Titratable Alkalinity of Blood and Its Application to Acidosis. A. W. Sellards, Baltimore.
45 Errors in Diagnosis of Pulmonary Tuberculosis. L. Brown, Saranac Lake, N. Y.
46 *Protective Enzymes of Body (Abderhalden). E. G. Grey, Boston.
47 Principal Types of Microorganisms in Baltimore Milk. L. P. Shippen, Baltimore.
48 Bacteriologic Findings in Baltimore Oysters. M. Joseph, Baltimore.

44. Titratable Alkalinity of Blood and Its Application to Acidosis.—Changes in the titratable alkalinity of the blood were found by Sellards to occur which give rise to distinct qualitative differences in the reaction of normal and pathologic sera to phenolphthalein. Conditions are readily obtained under which the blood serum, during an acidosis, is neutral or acid, whereas under the same conditions all normal sera are strongly alkaline. The less severe grades of diminished alkalinity can be detected in a qualitative way from the behavior of sera before and after the removal of protein and by the selection of a solvent, such as alcohol, in which the ionization and hydrolysis of carbonates are diminished. The effect of protein and of the solvent on the reaction permit a variety of combinations of these factors for detecting varying grades of diminished alkalinity.

Definite changes in the titratable alkalinity occur in experimental and spontaneous acidosis, in certain nephropathies, and in some anemias. The method also affords information of value in the differentiation of certain obscure comas. Cases of diabetes occur in which the excretion of ammonia and of acetone and related bodies is normal, but the titratable alkalinity is decreased and the tolerance to bases is increased. This affords proof of a definite impoverishment in bases in these cases. Changes in the titratable alkalinity are accompanied by corresponding changes in the tolerance of the body to fixed bases. The titratable alkalinity is of important biologic significance, while the available evidence indicates that the physico-chemical reaction of the blood is maintained at a fairly constant value, even in outspoken grades of acidosis.

The parallelism between the diminution in titratable alkalinity and the increase in tolerance to fixed bases in diabetes and in the nephropathies affords crucial evidence that this increase in tolerance is due practically altogether to a deficit of the body in alkalies or alkali-yielding substances. The questions as to whether such a condition constitutes an acidosis will be discussed in a subsequent paper.

46. **Protective Enzymes of Body (Abderhalden).**—In transplanting epithelial organs Grey says it is necessary to remember that such a procedure stimulates the formation of antiferments in the host; and, in the case of glands, it is important to avoid any preliminary intravenous or subcutaneous feeding—perhaps oral also—of the substance, since such administrations encourage the development of protective enzymes on the part of the host. The results of Grey's work agree with the conclusions of those investigators who have found that the Abderhalden ferments are specific.

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

April, VI, No. 10, pp. 155-176

49 Medical Ethics and Publicity. R. W. Johnson, Baltimore.
50 Relation of Public to Profession. C. J. Bonaparte, Baltimore.
51 Relation of Press to Physician and People. T. J. C. Williams, Baltimore.

Canadian Medical Association Journal, Toronto

April, IV, No. 4, pp. 277-372

52 Suprapubic Prostatectomy. A. McLean, Detroit.
53 *Present Position of Venesection. R. D. Rudolf, Toronto.
54 *Gastro-Enterostomy: Experimental and Clinical. F. A. C. Scrimger, E. W. Archibald and A. H. Pirie, Montreal.

53. **Present Position of Venesection.**—In many cases Rudolf says venesection is the most powerful method of treatment at our command, and, if used with great discretion, seems to be free from any bad effects. It is often indicated

in heart failure, acute or chronic, with marked cyanosis; acute toxemias, such as acute uremia; acute infections, such as typhoid and pneumonia; chronic toxemias, especially those with high blood-pressure. It may occasionally be used in cases in which one wishes to increase the coagulability of the blood, as in deep hemorrhages, and in aneurysm. Rudolf uses a method which consists in puncturing the vein through the skin with a sharp needle 2 mm. in diameter. The blood flows freely through this and if a piece of tubing, previously filled with water be attached to the needle and this be led into a vessel, then as much negative pressure may be used as desired and thus the chances of clotting in the needle are lessened.

54. **Gastro-Enterostomy: Experimental and Clinical.**—Placing of the stoma in the pyloric portion the authors claim as being the rational procedure. Here food will pass out by the stoma chiefly, though partly also by the pylorus if open. If an ulcer is present, it can be efficiently protected by excluding the pylorus. In both cases the animals do well. If an ulcer is found proximal to the pylorus anywhere in the pyloric portion, it can still be protected by laying a fascial ligature around the stomach between it and the anastomosis; further, in animals at least, an anastomosis placed in relatively the same position as that necessarily used in the human, if a short-loop operation is done, is much more efficient when the fascial ligature is applied immediately distal to the stoma, than when placed at the pylorus. The anastomosis in the cardiac portion, with the pylorus open, will, as has been observed by others, allow most of the food to go by the pylorus. It will afford no protection to an ulcer in that situation. More than this, in dogs at least, most of the food leaving by the pylorus reenters the stomach through the anastomosis, and the animals will not do well; they vomit and grow thin. The addition of the exclusion of the pylorus will protect an ulcer, but will not greatly improve things otherwise. The stomach will still fail to empty. The animals will vomit and grow thin.

What is the reason for the inefficiency of the stoma placed in the cardiac portion and its efficiency when in the pyloric portion? The answer according to the authors is to be found in the observations of intragastric pressure made by v. Pfungen, Kelling, Cannon and others. They proved that the pressure in the cardiac portion during digestion was low, but strikingly constant, variously estimated at from 6 to 16 cm. of water, while in the pyloric portion it is intermittently high, estimated at from 60 to 120 cm. of water, during active peristalsis. The cardiac portion is practically without peristaltic activity; its function is to maintain by tonic contractions a constant low pressure. The pyloric is strongly peristaltic, its muscle rhythmically develops relatively great power. The low pressure in the cardiac portion is insufficient to force out of the stoma so long, at least, as there is an easier path into the pyloric antrum. The high pressure in the pyloric end will force the food rapidly through any opening that is available.

Illinois Medical Journal, Chicago

April, XXV, No. 4, pp. 213-284

55 Cesarean Section, Report of Fourteen Cases from Services of Drs. Parkes and Danforth. W. C. Danforth, Evanston.
56 Injury to Pelvic Outlet Following Labor, or Any Other Cause. Should Immediate Repair Be Made? H. E. Sauer, Chicago.
57 *Device for Treatment of Prostatitis. C. M. McKenna, Chicago.
58 Carcinoma of Breast, Treated with Injections of Quinin Bisulphate and Roentgen Rays. M. Reichmann, Chicago.
59 Are Criminals Insane Individuals? C. H. Anderson, Menard.
60 Constitutional Immorality. P. E. Bowers, Michigan City, Ind.
61 Data Gathered in Study of Two Hundred and Sixty-Nine Murderers. R. Sleyster, Waupau, Wis.
62 Ways and Means of Preventing Physical, Mental and Moral Degeneracy. G. H. Hill, Des Moines, Iowa.
63 Deterioration in Dementia Praecox. C. Rickher, Kankakee.
64 Wassermann Reaction in Dementia Praecox. M. A. Bahr, Indianapolis.
65 Modern Conceptions of Paranoiac State. C. F. Read, Chicago.

57. **Device for Treatment of Prostatitis.**—The device which McKenna describes is a glass suction tube that fits into the rectum in such a way that hyperemia of the prostate and its surrounding tissue may actually be produced.

Journal of Abnormal Psychology, Boston

March, VIII, No. 6, pp. 361-428

66 Productions in Manic-Like State Illustrating Freudian Mechanisms. J. T. Maccurdy, Ward's Island, N. Y.
67 Slips of Tongue and Pen. C. P. Oberndorf, New York.
68 Three Examples of Name-Forgetting. H. W. Frink, New York.
69 Inventorial Record Forms of Use in Analysis of Dreams. L. H. Horton, Boston.
70 Freudian Psychology and Psychic Research. L. T. Troland.

Journal of Nervous and Mental Disease, Lancaster, Pa.

April, XL, No. 4, pp. 209-272

71 Case of Amyotonia Congenita. C. C. Beling, Newark, N. J.
72 Nature and Cutaneous Sensation, with an Instrument for Its Measurement. W. Timme, New York.

Lancet-Clinic, Cincinnati

April 11, CXI, No. 15, pp. 427-460

73 Serum Treatment of Puerperal Sepsis: Report of Three Cases. H. L. Woodward, Cincinnati.
74 *Camphor in Pneumonia. O. J. Seibert, Cincinnati.
75 General Cutaneous Emphysema in Whooping-Cough. C. A. Stammel, Jr., Cincinnati.
76 Diagnosis and Treatment of Tic Douloureux. V. P. Blair, St. Louis.

74. **Camphor in Pneumonia.**—The method used by Seibert is very simple and painless. After sterilizing the skin with tincture of iodin and cocainizing the subcutaneous tissue with a 2 per cent. solution of cocaine, with either a Luer or a Record syringe, he injects 10 cc. to the 100-weight of a 30 per cent. camphorated sesame solution and repeats this every eight or twelve hours, according to the severity of the infection. The best location for the injections is the outer side of the thigh, beginning high up and alternating thighs. As in any other bacterial infection, the earlier the treatment is begun the better and quicker the results.

Medical Record, New York

April 18, LXXXV, No. 16, pp. 691-736

77 Syphilis in Relation to Life Insurance. H. H. Schroeder, New York.
78 Present Status of Typhoid Immunization in Hospitals and Training Schools of New York. A. Meyer, New York.
79 Case of Facial Hemiatrophy. M. Neustaedter, New York.
80 Visualization of Upper Intestinal Tract, by Means of Roentgen Rays in Conjunction with Use of Improved Duodenal Tube. L. O. Palefski, New York.
81 Isoserum Treatment of Incoercible Vomiting of Pregnancy. C. K. Austin, Paris.
82 Cancer Statistics. A. L. Benedict, Buffalo.
83 Epidemic Icterus. A. Strauch, Chicago.

Michigan State Medical Society Journal, Grand Rapids

April, XIII, No. 4, pp. 211-285

84 Present Status of Surgery of Systemic Goiter. W. S. Bainbridge, New York.
85 Etiology and Pathology of Lobar Pneumonia. B. M. Edlavitch, Fort Wayne, Ind.
86 Symptomatology and Diagnosis of Pneumonia. H. B. Schmidt, Ann Arbor.
87 Albumin Content of Sputum: Its Value in Diagnosis and Prognosis of Tuberculosis. M. L. Holm and E. R. Chambers, Lansing.
88 *Experiments to Test the Toxicity of Mother's Milk after Administration of Acetanilid. B. A. Stevenson, Detroit.
89 Pelvic Infections. G. V. A. Brown, Detroit.
90 Syphilis of Nervous System. T. Klingmann, Ann Arbor.
91 Retrospect. E. T. Abrams, Dollar Bay.
92 Tonsillitis. J. J. Reycraft, Petoskey.
93 Elephantiasis. Case Report. H. C. Rockwell, Diamondale.

88. **Acetanilid in Mother's Milk**—To ascertain whether acetanilid does appear in the milk of a nursing mother and if so, whether in sufficient quantity to cause the death of an infant, tests were made by Stevenson. The babies were put on artificial food and the drugs were administered to the mothers and specimens obtained. In one set of experiments the reaction of the urines to the reagents was in each case definitely positive or negative, but the reaction of the milk specimens was not so satisfactory. The specimens from one patient were not uniform in color when first taken and there was considerable confusion after the addition of the reagents owing to the many shades and tints that were exhibited. It was decided that this might be due to the presence of the casein, so in the next set of experiments hydrochloric acid was added to each specimen and it was then boiled and filtered. With the comparatively clear filtrate thus obtained it was possible to be very positive about the reaction.

In this set of experiments the milk and all the urine secreted for thirty consecutive hours was obtained for the tests. The precipitation of the casein obviated the confusion in the color reactions. In the twenty-four specimens of milk and twenty specimens of urine examined there was a very faint reaction in but three specimens, these reactions occurring in thirty hours after the first and fifteen hours after the second dose. The babies began nursing as soon as the experiments were concluded and none of them showed any ill effects. From these experiments it would seem that acetanilid derivatives are at times eliminated but that more frequently there is no trace of them. The quantity found in each case was so minute that it could only be detected by holding the specimen against a white background. The time of the first appearance of the reaction after the administration of a dose of 4 grains varied from seven to fifteen hours.

Modern Hospital, St. Louis

April, II, No. 4, pp. 203-266

94 New Montefiore Home for Chronic Invalids. S. Wachsmann, New York.
95 Functions of Modern Hospital. R. O. Beard, Minneapolis.
96 Standardization of Hospital Plumbing Fixtures. W. B. Stratton, Detroit.
97 Organization of Housekeeping Department. H. Crawford, Baltimore.
98 Student Government in Industrial School. A. M. Clay, Chillicothe.
99 Mechanic Ventilation of Hospitals. T. J. Van der Bent, New York.
100 Cobb Building of Seattle for Physicians and Surgeons. A. H. Albertson, Seattle.
101 Organization and Management of Housekeeping Department. E. A. Greener, Muskegon, Mich.
102 Small Hospital of Low Cost. V. A. Matteson, Chicago.
103 Hospital Aid for Handicapped. B. Hollings, Cambridge, Mass.

New York State Journal of Medicine

April, XIV, No. 4, pp. 175-228

104 Relation of Ileocecal Valve to "Lane's Kink." W. F. Campbell, Brooklyn.
105 Treatment of Typhoid. W. S. Gleason, Newburgh.
106 Recognition of Early Heart-Insufficiency. A. T. Lytle, Buffalo.
107 Management of High Blood-Pressure. F. C. Rice, Ripley.
108 Blood-Pressure in Pulmonary Tuberculosis. L. Shalet, New York.
109 Hematuria: Its Pathologic and Diagnostic Import. L. F. Schiff, Plattsburgh.
110 Treatment of Fibroids by Deep Roentgenotherapy. J. J. Levy, Syracuse.
111 Pathology and Treatment of Chronic Gonorrheal Urethritis in Male. J. D. Olin, Watertown.
112 Recent Advances in Neurology and Psychiatry. E. L. Hanes, Rochester.
113 Burden of Mental Defect. H. G. Matzinger, Buffalo.
114 Relation of General Practitioner to Public Health. A. MacFarlane, Albany.
115 Surgical Treatment of Cholecystitis. M. O'Meara, Kingston.
116 Lichen Implanus. W. B. Cunningham, New York.
117 Prevention of Tuberculosis by Medical Inspection of Schools. M. E. Lapham, Highlands, N. C.
118 *Case of Sciatica, Treated with an Autogenous Vaccine. H. Greeley, Brooklyn.
119 Publicity in Lay Press by Members of Society. F. E. Sondern, New York.

118. **Sciatica Treated with Autogenous Vaccine.**—Greeley made a vaccine from a throat coccus, and at once gave the patient a dose of 100 millio , killed by one hour at 60 C. The patient developed no reaction of any kind (not even at puncture). His temperature continued normal or a little below, and at the end of a week Greeley doubled the dose. This increased the pain, which had remained about constant, and developed 0.5 F. temperature elevation which disappeared within twenty-four hours. Three days later he was up and about, greatly improved, and at the end of the week was given the third dose, 400 million. This reacted about as the preceding, but when he returned again, seven days later, all pain had disappeared, and a final precautionary dose of double the last was given without any following reaction, and the patient has been without the least symptom of the malady for the past five months.

Northwest Medicine, Seattle, Wash.

April, VI, No. 4, pp. 91-120

120 Insane in Washington Territory. T. W. Prosch, Seattle.
121 Some Phases of Chronic Membranous Pericolitis. N. W. Jones, Portland, Ore.
122 Perforating Duodenal Ulcer with Reference to Pain in Left Shoulder as Symptom. A. A. Matthews, Spokane.
123 Recent Observations in Nephritis. G. G. Richards, Salt Lake City.
124 Blood-Pressure in General Practice. R. W. Stearns, Medford, Ore.
125 Surgical Problems of Country Physician. G. W. States, Preston, Idaho.
126 Cancer Control Precancerous Lesions. J. C. Bloodgood, Baltimore.
127 Relation of Roentgenologic Specialist to Medical Profession. E. F. Tucker, Portland, Ore.

Southern Medical Journal, Nashville

April, VII, No. 4, pp. 261-344

128 *Pathology of Heart in Rheumatic Infection in Children. W. W. Harper, Selma, Ala.
129 Symptoms of Rheumatism in Childhood. H. P. Dawson, Montgomery, Ala.
130 Mumps. J. S. Turberville, Century, Fla.
131 Cocain as Respiratory Stimulant. G. E. Pettey, Memphis.
132 Report of New York Commission on Milk Standards. W. A. Evans, Chicago.
133 Dairy Inspection in Cincinnati. J. H. Landis, Cincinnati.
134 Sanitary Milk Surveys in Kentucky—Some Facts, Methods and Results. R. M. Allen, Lexington, Ky.
135 Ununited Fractures. D. Eve, Nashville.
136 Indigestion as Seen by Surgeon, with Illustrative Case Histories. W. B. Thorning, Houston, Tex.
137 Growths and Syndromes of Thyroid Requiring Operation. W. D. Haggard, Nashville.
138 Case of Priapism Relieved by Intravenous Injections of Salvarsan. C. W. Shropshire and C. J. Watterston, Birmingham, Ala.
139 *Surgical Treatment of Anuria. G. R. Livermore, Memphis.
140 Case of Anorectal Imperforation with Autopsy Findings. H. P. Cole, Mobile, Ala.
141 Foreign Body in Sphenoid Cavity. R. B. Nelson, Memphis.
142 Treatment of High-Pressure Disease. S. R. Roberts, Atlanta, Ga.
143 Accommodation in Eyes of Persons Above Forty Years of Age. D. S. Reynolds, Louisville, Ky.

128. Abstracted in THE JOURNAL, Dec. 20, p. 2269.

139. **Surgical Treatment of Anuria.**—In Livermore's method the kidneys are exposed, delivered and stripped of their capsules, a ½-inch incision is then made in the cortex of each kidney, in the center of its convex border and continued into the pelvis. A strip of gauze ½-inch wide is saturated with a 10 per cent. ichthyol in glycerin solution, grasped with dressing forceps and carried through the incision in the cortex into the pelvis of the kidney. The gauze may be packed directly into the pelvis of the kidney instead of going through the cortex, but Livermore believes it better to have the action of the ichthyol and glycerin on both cortex and pelvis. The kidneys are then returned to their positions and the wounds closed with the drains coming out in the center of the wounds. The gauze should be renewed in twenty-four hours and the wounds again packed with fresh gauze saturated with the ichthyol glycerin solution. Repeat procedure till free diuresis is established.

West Virginia Medical Journal, Wheeling

April, VIII, No. 10, pp. 327-360

144 Physiologic and Pathologic Relations of Eye and Accessory Sinuses of Nose. C. B. Wylie, Morgantown.
145 State Department of Health. F. V. Beitler, Halethorp, Md.
146 Need of State-Wide Sanitary Inspection. W. A. McMillan, Charleston.
147 Commercialism vs. Ethics. J. E. McDonald, Logan.
148 Present Status of Tonsil and Adenoid Surgery. I. Fawcett, Wheeling.
149 Case of Double Cryptorchidism. C. E. Grimm, St. Marys.
150 Case of Musculospiral Paralysis. M. Mendeloff, Charleston.
151 Ectopic Lentis. J. L. Dickey, Wheeling.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 4, I, No. 2779, pp. 745-800

1 Lister: Laboratory and Bedside. R. H. Russell.
2 *Infection by B. Coli in Puerperium, and on Infective Conditions of Pregnancy. H. J. S. Simson and J. M. Bernstein.
3 Plague in Ceylon. A. Castellani and M. Philip.
4 Instrument for Detection of Slight Degrees of Nasal Obstruction. H. A. Kisch.
5 Case of Temporo-Sphenoidal Abscess in Course of Chronic Otitis Media. A. Ryland.
6 Two Cases of Ocular Disease Associated with Pyorrhea Alveolaris. S. G. Tibbles.
7 Hygienic Aspect of Coal-Mining Industry in United Kingdom. F. Shufflebotham.

2. **Infection by B. Coli in Puerperium.**—In all cases of pregnancy and especially in primiparae, if there be symptoms pointing to bladder irritation, or a previous history of so-called ague or malaria, the authors insist that the bacterial

examination of a catheter specimen of the urine is indicated. If a condition of bacilluria be found, then a prophylactic course of vaccines is called for, and may prevent serious complications later on.

As regards treatment of the actual infection itself during the puerperium, Simson and Bernstein state that there can be no doubt that autogenous vaccines give by far the best results. In puerperal fever there has been a tendency to administer immediately antistreptococcus serum; but, though this may give favorable results occasionally in puerperal septicemias, it is obvious that it can be of no use in *B. coli* infections. It is certain that the stock *B. coli* vaccines are not nearly so efficacious as are the autogenous vaccines, for already the bacillus alters its characters with its environment, and it is usually one of the many atypical varieties of the *B. coli* which causes the infection. In Case 1 of this series no improvement followed the administration of a stock *B. coli* vaccine. While there must be delay in preparing an autogenous vaccine, there is no extreme urgency in these infections, and it is possible to hasten the process so that the first dose may be given in less than twenty-four hours. As a rule, improvement is rapid, and after the first dose the temperature may fall and the toxic symptoms be relieved, whilst the bacteria may disappear from the urine. But even so, one must be guarded in giving a prognosis of rapid return to health or in discontinuing the treatment too soon; for, though it is easy to control the bacterial activity, in some cases it is difficult and occasionally impossible entirely to inhibit them. Consequently the vaccines should be continued in increasing doses at increasing intervals of time for several weeks and the further treatment controlled by periodical examinations of the urine. Three cases of autogenous *B. coli* infection are cited.

Bristol Medico-Chirurgical Journal

March, XXXII, No. 123, pp. 1-96

8 *Diseases of Lungs Associated with Presence of Friedländer's Bacillus. J. M. Clarke.
9 Unusual Conditions Found in Operating for Radical Cure of Hernia. C. A. Morton.
10 *Digital Percussion and Cardiac Sign in Carcinoma. W. Gordon.
11 Simulation of Aortic Aneurysm by Other Aortic and Cardiac Diseases. C. Coombs.
12 Fibroid Uterus. W. H. C. Newnham.
13 Hyperpiesis and Arteriosclerosis. C. W. J. Brasher.
14 Electric Reactions in Facial Paralysis, Especially in Reference to Prognosis in Post-Operative Cases. J. P. I. Harty.

8. **Diseases of Lungs.**—Clarke reports three cases of lung disease caused by the bacillus of Friedländer in which the distribution and character of the lesions were thus exactly those of progressive pulmonary tuberculosis. It does not correspond to the ordinary position of bronchiectases, which usually most affect the lower lobes. In one case differences from pneumococcal pneumonia were seen in the irregular oscillations of the temperature, the character of the sputum, which was yellowish-green, abundant and not blood-stained, and the absence of dense consolidation. The signs at the right apex for two or three days suggested the possible formation of a cavity. In two other cases the pulmonary lesions were those typical of chronic pulmonary tuberculosis with excavation. So typical were the lesions in character and especially in distribution, that from the physical signs the diagnosis of chronic phthisis was made. The pathologist reported that no tubercle bacilli could be found in the sputum after repeated and careful investigation. The sputum was large in quantity, purulent and slightly offensive. The first culture showed presence of *B. Friedländer* and *M. catarrhalis*. Repeated examinations for tubercle bacilli were made, but always with a negative result. There were no elastic fibers in the sputum.

10. **Cardiac Sign in Carcinoma.**—The cardiac sign in carcinoma referred to by Gordon is a remarkable diminution of the area of cardiac dulness in the recumbent posture as determined by digital percussion. In that posture the dulness, in the normal adult, begins above about the third costal cartilage, reaches rightwards as nearly as possible to the midsternal line, and measures across about 3 to 3½ inches at the level of the fifth costal cartilage. On the other hand, in the carcinoma patient who presents the sign, the cardiac dulness in recumbency begins above about the fourth or fifth costal cartilage, has its rightward edge about ½ inch or 1 inch to the left of the midsternal line, and measures across less than 2 inches at the level of the fifth costal cartilage. Often it measures less than 1 inch across. Sometimes there is no cardiac dulness at all. The sign is often associated with a remarkably soft and toneless pulse and feeble heart sounds.

Certain limitations exist as to the significance of the sign. Thus when any cause is present, tending, like ordinary emphysema, to reduce the area of cardiac dulness, then a very small dulness naturally conveys no special meaning. On the other hand, when there is any well-known cause of enlargement of heart dulness, such as albuminuria, valvular heart disease, pericarditis or retraction of lung from phthisis or past pleurisy, then the absence of the sign is equally without significance. Moreover, where the heart is displaced considerably upward the absence of the sign is unreliable, since the organ has been moved from a wider into a narrower space, in which it is not so free to fall back from the anterior chest-wall on recumbency. And lastly, where a large esophageal carcinoma has lain directly behind the heart, Gordon believes that the absence of the cardiac sign was due to the growth pinning the organ forward against the sternum and rib cartilages. Of a total of 111 cancerous cases analyzed by Gordon, 97 (87 per cent.) gave the sign, whereas of a total of 107 non-cancerous cases only 18 (16 per cent.) gave it.

Glasgow Medical Journal

April, LXXXI, No. 4, pp. 241-319

15 Malingering. J. Collie.
16 Abdominal Emergencies. J. Morton.
17 Dangers of Light Anesthesia. G. H. Clark and E. P. Cathcart.

Journal of Obstetrics and Gynecology of British Empire, London

February, XXV, No. 2, pp. 53-112

18 Positive Value of Abderhalden's Test in Diagnosis of Pregnancy. R. L. M. Wallis.
19 Successive Tubal Gestation Associated with Blood Cyst of Ovary. Laparotomy on each Occasion. Recovery. A. C. Butler-Smythe.
20 Three Atypical Cases of Post-Partum Pyelitis. H. L. Murray.
21 Uterus Didelphys, Both Horns of which have been Pregnant at Different Times. J. H. Smith.
22 Hysterectomy for Hydatid Mole. W. E. Fothergill.
23 Carcinoma in Double Uterus (Uterus Septus Bicollis with Vagina Duplex.) R. C. Buist and J. M. Valentine.
24 Uterus in Hernial Sac of an Hermaphrodite. S. Clark.

Lancet, London

April 4, I, No. 4727, pp. 947-1016

25 Medico-Social Problems from an Insurance Point of View. T. Oliver.
26 *Physiology and Pathology of Uterine Hemorrhage. H. B. Whitehouse.
27 *Causes of Failure of Vaccine Therapy. W. M. Crofton.
28 Operative Treatment of Pulmonary Tuberculosis. H. M. Davies.
29 Diagnosis of Pulmonary Tuberculosis by Roentgen Rays. A. C. Jordan.
30 *Case of Thoracic Aneurysm of Unusual Size. G. Cooper.
31 *Extrathoracic Aneurysm of Transverse Arch of Aorta. D. W. K. Moody.

26. **Uterine Hemorrhage.**—It appears desirable to Whitehouse that a careful investigation should be made of the discharge in every case of obscure uterine bleeding. The points in the investigation to which special attention should be directed are: 1. The presence or absence of thrombi within the vagina. 2. The formation of thrombi within the discharge after the fluid has been allowed to stand. 3. The thrombolytic power of the secretion. 4. The calcium content of the same. 5. The microscopic characters of the deposit obtained after centrifugalization of the fluid collected directly from the uterine cavity in order to obtain an index of the degree of tissue destruction. Six hundred and eight cases were analyzed by Whitehouse.

It was evident that displacements of the uterus do not directly produce excessive uterine hemorrhage. Thus, out of a total of eighty-eight cases of retrodisplacements only thirty-eight gave evidence of menorrhagia and of the latter only fifteen had intermenstrual losses. In those cases in which hemorrhage was present a careful review of the case histories did not show that the displacement was more

V. 191

acute than in patients in whom no bleeding was present. On the other hand the proportion of irregular bleeding was considerably greater in the complicated cases than in those that are simple. With prolapsus uteri it was found that out of a total of eighty-nine cases only thirteen showed evidence of excessive bleeding. Fibrosis and chronic metritis was in a very large proportion of cases associated with uterine bleeding. Thus, in a total of twenty-seven cases, twenty-three suffered from menorrhagia. Hemorrhage in cases of fibrosis uteri is probably due to two factors: (a) changes in the endometrium, and (b) loss of contractility of the metrium owing to its replacement by fibrous tissue. Out of a total of seventy-three cases of endometritis fifty-six were associated with menorrhagia and twenty-nine with metrorrhagia. A thorough investigation of the cases classed clinically as "endometritis" showed that sixty-one of the patients were married, and of these forty-three directly attributed the irregular hemorrhages to the last labor or abortion at intervals varying from three months to one year. The irregularity, in fact, dated from the resumption of function. Examination of the curettings revealed the following facts: (a) twenty-five cases showed what in the past was designated "glandular endometritis"; (b) nine cases showed all the characteristics of the so-called "interstitial endometritis" of Ruge's classification; (c) atrophic "endometritis" was present in two; (d) plasma cells and marked leukocytic infiltration appeared in seven. In other words, thirty-four exhibited only evidence of those changes known to be but physiologic, and therefore could not be classed as "endometritis." Endometritis of septic origin does not appear to produce uterine hemorrhage. Thus, in a series of fifteen cases where curettage was performed for discharge and pain, the endometrium was infiltrated with plasma cells and leukocytes. Hemorrhage was absent. Hypertrophy of the endometrium, in its diffuse form, occurs under the name of "glandular hypertrophy"; its localized variety is the common "adenomatous polypus." Hemorrhage is usually profuse and appears to be due to excessive thrombolysis of the uterine clot. Cystomata of the ovary rarely cause interference with the menstrual function. Displacements of this organ as a general rule do not produce excessive uterine hemorrhage. Hypertrophy of the ovary affects the stroma rather than the Graafian follicles, and the close association of the condition with hypertrophy of the endometrium appears to afford clinical evidence that it is from the ovarian stroma that the specific hormone is derived. Pelvic inflammation is not infrequently associated with excessive hemorrhage from the uterus. Thus in 176 cases 67, or 38 per cent., were accompanied by menorrhagia. Whitehouse is inclined to think that the hemorrhage is the result of interference with venous return rather than to any specific effect either on endometrium or ovary, since it occurs not only in connection with inflammatory lesions related to the sexual organs, but also in cases secondary to extragenital inflammation, such as appendicitis. The value of curettage in the therapeutics of uterine hemorrhage Whitehouse says is principally for diagnostic purposes. If the examination of the curetted endometrium is taken in conjunction with an analysis of the menstrual discharge, and care taken to correlate the appearances of the endometrium with the period of the sexual cycle, much valuable information may be gained as to the cause of a specific hemorrhage. Curettage at the two extremes of sexual life is, in his opinion, a useless procedure except for diagnostic purposes. It is not possible to alter the character of the endometrium by any amount of curetting This is proved by examination of repeated curettings from the same uterus, and it accounts for the fact that in glandular hyperplasia of the endometrium curettage is only of temporary benefit. Treatment to be successful must be based on a physiologic and pathologic basis. Thus, where hemorrhage is due to the absence of thrombokinase, attempts may be made to replace the same. Fibrin ferment directly applied to the endometrium is also of service in directly checking hemorrhages of this nature. If bleeding is due to excessive thrombolysis, the result of hyperplasia of the endometrium, temporary relief may be obtained by curetting. If bleeding recurs Whitehouse suggests that partial oöphorectomy be performed. Where hemorrhage appears to be the result of venous statsis appropriate means must be taken to relieve the same, either by purgation in the case of portal congestion or operation where the cause is severe and chronic inflammation. In those cases in which the uterus has lost its power of regulating the supply of blood to the endometrium, such as in fibrosis or arteriosclerosis, hysterectomy appears to be the safest and best method of treatment.

27. **Causes of Failure of Vaccine Therapy.**—The potential causes of failure mentioned by Croften are: 1. Failure of patient to react. 2. Failure to diagnose the infecting microbes. 3. Incomplete immunization. 4. Failure to give the doses at proper intervals.

30. **Thoracic Aneurysm of Unusal Size.**—The tumor in Cooper's case measured 22¼ inches round the base, 9 inches from the upper pole of the tumor to the lower pole across the most prominent part, and 11½ inches measured right to left across the tumor.

31. **Extrathoracic Aneurysm of Transverse Arch of Aorta.**—In Moody's case the tumor measured 23 inches in circumference and 11 inches across.

Quarterly Journal of Medicine, London

April, VII, No. 27, pp. 209-323

32 *Paroxysmal Tachycardia. H. G. Butterfield and G. H. Hunt.
33 Cholesterin: An Account of Its Relations to Pathology and Physiology. J. W. McNee.
34 *Bilateral Salivary Swellings (Mikulicz' Disease). H. Thursfield.
35 *Prognosis of Acute Articular Rheumatism, with Special Reference to Cardiac Manifestations. C. G. Kemp.
36 Anaphylaxis and Its Bearing on Medicine. Critical Review. J. McIntosh.
37 Bacterial Endocarditis. Critical Review. I. Simons.

32. **Paroxysmal Tachycardia.**—Four cases of paroxysmal tachycardia are described by Butterfield and Hunt, in three of which the heart was examined histologically. In the first case the focus from which the ectopic beats arose was diagnosed as being situated in the ventricles. Post mortem, the interventricular septum was the site of the most extensive disease. In the second and third cases the tachycardia was supraventricular in origin, in one case being auricular, in the other either auricular or nodal. In both these cases the most marked lesions were found in the neighborhood of the sino-auricular node. The histologic examination thus confirms the diagnosis made from the electrocardiograms. The fourth case was one of auricular origin; in the intervals between the attacks the patient enjoyed fairly good health.

34. **Bilateral Salivary Swellings.**—Clinically, Thursfield says, it is possible to recognize at least eight groups of cases in which bilateral swellings of the salivary glands, either with or without an accompanying enlargement of the lymph-nodes, form the most characteristic symptoms. 1. A congenital hereditary or family affection. 2. "Mikulicz' disease" proper. 3. "Mikulicz' disease" with involvement of the lymphatic apparatus. 4. Leukemia. 5. Tuberculosis. 6. Syphilis. 7. Gout. 8. Sialodochitis fibrinosa; intermittent or periodic salivary swelling. In addition there are from time to time met with cases which do not appear to belong to any of these groups.

The treatment which appears to promise the best results is to remove carefully any possible source of chronic infection, e.g., decayed teeth; to seek to establish the general health; to give arsenic in the largest doses which can be tolerated and to treat the actual swelling with the Roentgen ray.

35. **Prognosis of Acute Articular Rheumatism.**—An examination of a considerable number of cases of acute articular rheumatism has convinced Kemp that 23 per cent. of patients go through one or more attacks of acute rheumatism without any clinical affection of the heart, irrespective of the age when first attacked; 22 per cent. developed signs of carditis in the acute stage, these signs disappearing during convalescence; 18 to 20 per cent. of the cases which develop signs of endocarditis, not clearing up before patient leaves the hospital, have no permanent valvular lesion, the murmurs being

due to myocarditis, or incompetence from temporary hyperemia of the valves, associated with dilatation. If a synovial membrane can recover, why should not a heart valve? In 14.5 per cent. of cases with acute rheumatism endocarditis of severe type, the murmurs undergo a change, resulting in the disappearance of one or more of the murmurs, such murmurs being due to associated dilatation; as a rule, the murmurs due to myocarditis are softer in character than those due to valvular disease. Cases in which the heart is going to recover completely show signs of such recovery within twelve months of the acute attack, though the process may not be completed till some years later. Graupner's test for the estimation of the cardiac efficiency has not been proved to be of any value in enabling one to recognize the presence or degree of cardiac weakening, not appreciable by the methods already in general use. The amount of physical work which each individual can do in earning his or her living is a far more reliable and efficient test of the heart's working capacity.

Bulletin de l'Académie de Médecine, Paris

March 17, LXXVIII, No. 11, pp. 383-414

38 Adiposis Dolorosa in Man of 55. (Maladie de Dercum avec infiltrations massives disséminées et hyperplasies mammaires chez un adulte.) H. Hallopeau and E. Dainville.
39 Case of Congenital Torticollis. (Considérations pathogéniques et thérapeutiques.) L. Picqué.

Lyon Médical, Lyons

March 8, XLVI, No. 10, pp. 521-560

40 Tuberculosis a Cause of Nodular Erythema. Carle.
41 Antityphoid Inoculation Eradicates Long Endemic Typhoid in Certain City District. (Une expérience de vaccination antityphique en champ clos.) E. Briau.

March 22, No. 12, pp. 633-680

42 *Pathogenesis and Etiology of So-Called Idiopathic Hypertrophic Myocarditis. J. Paviot. Commenced in No. 11.

42. **Myocarditis and Hypertrophy.**—Paviot describes in detail two cases of large hypertrophied heart, without valvular lesions, with no sclerosis of the cardiac muscle and without any primary lesion of the kidneys. This so-called idiopathic myocarditis is a slow and long continued inflammatory process caused in the two cases described by tuberculosis but it may be due to other diseases, particularly syphilis.

Presse Médicale, Paris

March 25, XXII, No. 24, pp. 229-236

43 *Tropical-Germ Carriers. (Importateurs de maladies exotiques.) L. Landouzy and R. Debré.

March 28, No. 25, pp. 237-244

44 Cancer in the Appendix. (Tumeurs endocrines de l'appendice.) A. Gosset and P. Masson.
45 Tardy Bone Disease from Inherited Syphilis. P. V. Badin.
46 Congenital Absence of Sacrum. (Bassin rétréci par absence de sacrum.) P. Desfosses.

43. **Importers of Germs of Tropical Diseases.**—This communication was summarized in the Paris Letter, p. 1267.

Revue de Médecine, Paris

March, XXXIV, No. 3, pp. 161-240

47 *Hyperchlorhydria and Hyperthyroidism. G. Marañon.

47. **Hyperthyroidism and Hyperchlorhydria.**—Marañon says that certain cases of functional gastric complaints are caused by disturbances in internal secretion. Hyperchlorhydria is frequently found associated with symptoms indicating excessive functioning of the thyroid gland. Hyperthyroidism includes many cases that do not show the classical symptoms of Basedow's disease. They are the mild or abortive cases, the *formes frustes* of the French authors. He calls these the vagotonic cases; and it is they, rather than the typical exophthalmic goiter cases, that show hyperchlorhydria. He thinks that the excessive secretion of gastric juice is caused by stimulation of the pneumogastric nerve by the thyroid secretion.

Twenty case-histories are given. He concludes that in many cases now diagnosed as gastric neuroses there is a latent hyperthyroidism that is not discovered. This is confirmed by the fact that many of his patients in this group improved under antithyroid medication. It is this class of patients with hyperthyroidism that are benefited most by thyroidectomy. The best drug remedy is atropin as it has an inhibitory effect on the pneumogastric.

Revue Médicale de la Suisse Romande, Geneva

February 20, XXXIV, No. 2, pp. 89-136

48 Infant-Welfare Work. (Puériculture élémentaire à l'usage des médecins, des sages-femmes et des mères de famille.) A. Montandon.
49 Experiences at the Balkan War. (2 mois en Serbie pendant la seconde guerre balkanique.) E. Bourquin.
50 Serious Serum Sickness after Injection of Antitetanus Serum Eleven Years after Injection of Diphtheria Antitoxin. P. Gautier.

March 20, No. 3, pp. 137-232

51 *Hemolytic Jaundice. (Les ictères hémolytiques.) M. Roch.
52 *Blunders in Diagnosing Extra-Uterine Pregnancy. L. Aubert.
53 *Intraspinal Injection of Magnesium Sulphate in Treatment of Tetanus. H. Vulliet.
54 *Injections of Oxygen in Treatment of Nervous and Mental Disease. M. Dardel.

51. **Hemolytic Jaundice.**—The special feature about this form of icterus is the intensity of the jaundice in contrast to the fine state of the health in general. Roch reviews the history and various questions connected with this type of jaundice, commenting on the enlargement of the spleen and the apparently normal functioning and behavior of the liver except that small concrements of pigment may develop calcium bilirubinate stones which may induce attacks of colic in the liver. The abnormal fragility of the red corpuscles is shown by adding a drop of the blood to each of six test-tubes containing from 60 to 70 drops of a 7 to 9 per thousand salt solution with enough drops of distilled water added to bring each to 70 drops. Each tube is centrifuged and the fluid turns pink or red proportionally to the resisting power of the reds. The serum does not seem to contain free hemolysins, but the spleen is very large and at times is painful. One patient has developed a pigmented retinitis, showing that the excess of pigment is not always an indifferent matter. Treatment of underlying syphilis, malaria or helminths should be supplemented by means to prevent hemolysis and stimulate regeneration of the blood, arsenic, calcium chlorid, organotherapy or cholesterin. The latter seems to be proving useful in checking hemolysis in pernicious anemia, hemolytic icterus and hemoglobinuria. It has not been used in a sufficient number of cases for a decisive judgment, but to date the results have been very encouraging. Splenectomy might also be considered in extreme cases; exposure to the Roentgen rays might answer the same purpose.

52. **Blunders in Diagnosing Extra-Uterine Pregnancy.**—Aubert tabulates the details of five cases in which a tubal pregnancy was mistaken for appendicitis, uterine abortion, perforation of an ulcer or twisted ovarian cyst. A delay in the menses for a few days to three months was found in all; one had no pain before the acute onset of trouble; another had had abdominal pains for a year; the cervix was hard in all but two cases. The right culdesac felt doughy and tender in one, a trifle tender in another; negative in a third, but in the three others a tumor gradually developed in the adnexa. The main point is to bear in mind that women sometimes deceive themselves, while others strive to deceive the physician, not only in regard to a pregnancy but any gynecologic affection. Even when abortion is diagnosed its extra-uterine location may be overlooked.

53. **Intraspinal Injection of Magnesium Sulphate in Treatment of Tetanus.**—Vulliet reports two cases of tetanus but only one patient recovered and this was not the one treated with magnesium sulphate. He warns that while this drug seems to be proving a powerful weapon in fighting tetanus, yet we must not forget that it is a two-edged sword, liable to do more harm than good. He injected into the spinal canal 0.06 c.c. of a 15 per cent. solution repeated two days later. The boy's leg had been cut by a cart and a physician had disinfected the wound and coaptated the lips with clamps. It healed promptly but symptoms of tetanus developed in two weeks.

54. **Injection of Oxygen in Nervous and Mental Disease.**—Dardel was encouraged by the success of Toulouse in this line to try subcutaneous injections of 300 to 500 c.c. of oxygen

in various nervous and mental affections, and here reports the results in twelve cases. The procedure seems entirely harmless, he says, and brought apparently natural sleep to persons long suffering from insomnia or restlessness. It seems to act like a sedative and enables drugs to be dispensed with. Even in the cases of chronic mental disease the sedative action seemed beyond question.

Revue Pratique d'Obstétrique et de Gynécologie, Paris

March, XXII, No. 3, pp. 67-92

55 Pelvic Neuralgia of Genital Origin. (Les névralgies pelviennes d'origine genitale chez la femme et leur traitement.) M. de Lepinay. Commenced in No. 2.
56 Conservative Treatment of Inversion of Uterus. M. Vautrin.
57 Management of Ovarian Tumors during Delivery. P. Puech and J. Vanverts.

Semaine Médicale, Paris

March 25, XXXIV, No. 12, pp. 133-144

58 The Pulse in the Inferior Vena Cava and the Dance of the Jugulars in Severe Anemia. L. Bard.

April 1, No. 13, pp. 145-156

59 Cortical Ataxia from Automobile Accident, Falling on the Head; Localization by Segments. F. Rose.

Archiv für klinische Chirurgie, Berlin

March 24, CIV, No. 1, pp. 1-300. Last indexed March 28, p. 1055

60 *Early Operative Treatment of Exophthalmic Goiter. (Die Frühoperation des Morbus Basedow.) E. Liek.
61 *Interposed Fat Flaps in Operations on Nerves and Tendons. (Die autoplastische Fettransplantation zur Neurolysis und Tendolysis.) R. Eden and E. Rehn.
62 Primary Sarcoma of the Gall-Bladder. K. Iwasaki.
63 *Traumatic Perforation and Peritonitis in a Case of Walking Typhoid. R. Carnelli.
64 *Importance of Testing Heart Functioning before Operations. (Funktionsprüfung des Herzens und ihre praktischen Ergebnisse für die Chirurgie.) W. Hofmann.
65 *Habitual Dislocation of the Shoulder. E. O. P. Schultze.
66 Supravesical Femoral Hernia. Gontermann.
67 *Operative Treatment of Wandering Kidney. H. Scheuermann.
68 Cartilage Tumors at Cartilage Joints. (Gelenkchondrome.) R. Eden.
69 Omentum to Arrest Hemorrhage in Liver. (Anwendung des isolierten Netzes zur Stillung der Leberblutung.) N. Beresnegowsky.

60. **Early Operative Treatment of Exophthalmic Goiter.**—Liek has operated in 28 cases of exophthalmic goiter in the last four years; in all but 6 the disease was of a severe type. This experience and review of the literature have convinced him of the vital necessity of educating general practitioners to realize the importance of an early operation in every case of exophthalmic goiter, as soon as the diagnosis is made. This puts an end to the excessive thyroid functioning before the resulting products have irreparably damaged the heart, kidneys, liver, lymphatic system, etc. The thyroid tissue is firmer and easier to operate on at this early stage and the heart is in better condition. The results are prompt and permanent; especially noticeable is the rapid and complete subsidence of the exophthalmos. He says that the insurance companies are realizing the advantages of an early operation and now send to the surgeon at once every case of Basedow, having found that this restored the earning capacity without further delay. These are all early-stage cases and it is in this group that the most striking benefit is realized. Liek had two fatalities, both in old Basedow cases; the patients were terribly frightened and both died before the operation proper was commenced. He now refuses to operate when the patient is in such fright. Those with vagotony seem in a more precarious condition than others, as also those at the height of intoxication—evident in the excitement and muscular weakness while the more rapid pulse after slight exertion and a trifle of dyspnea are signs of beginning exhaustion on the part of the heart. In normal conditions there is a difference of from 0.1 to 0.3 degree Centigrade between the temperature in the axilla and rectum; when there is a difference of a whole degree this suggests chronic weakness of the heart. At the same time he emphasizes that extreme excitability seemed to have a greater influence on the outcome than the condition of the heart in his experience.

61. **Interposition of Fat Tissue in Operations on Tendons and Nerves.**—Considerable clinical and experimental research is here reported, all confirming the advantages and lack of drawbacks of the method of protecting nerves and tendons, at points exposed to special danger from adhesions or pressure by wrapping them in an autoflap of fat tissue. The foreign body irritation is slight and the flap retains its structure and regenerates so that it ensures permanent protection. The flap healed smoothly in place even in infected cases.

63. **Walking Typhoid.**—Carnelli relates that an apparently healthy man chasing his dog hit his abdomen against a milestone and experienced such pain that he could not rise. Laparotomy the same day disclosed that he was at the third week of typhoid. The contusion burst one of the typhoid ulcers and peritonitis followed, but thanks to the prompt laparotomy the man soon recovered.

64. **Testing the Functional Capacity of the Heart.**—Hofmann discusses the various methods in vogue for this purpose and lauds Katzenstein's procedure as the simplest and most reliable while it does not weary the patient. The pulse and blood-pressure are recorded several times and then both femoral arteries are compressed with the fingers just below the inguinal ligament. The compression is kept up for at least two and a half minutes, and then pulse and blood-pressure are recorded anew. The way in which the heart reacts to this obstacle to the circulation shows conclusively to what extent it can be relied on. With a functionally capable heart the blood-pressure rises while the pulse remains unmodified or grows slower. With a weak heart the blood-pressure does not go up and generally goes down while the pulse becomes accelerated. Some have said that this puts too much of a strain on a weak heart, but in the numerous cases in which the method has been applied in Katzenstein's service no by-effects have been observed except a slight syncope in one patient anemic from gastric hemorrhages. The method is applied as a routine procedure before a major operation and the particulars are tabulated in twenty-eight stomach or duodenum cases; in thirty intestine, gall-bladder or hernia cases; in six breast cases; ten heart and goiter cases, and in twelve miscellaneous cases. Hofmann advocates applying this test several times before attempting a serious operation and reiterates that the procedure is harmless. In his one case of slight syncope all disturbances ceased at once when the compression was stopped.

65. **Habitual Dislocation of the Shoulder.**—Schultze gives an illustrated description of twenty-three cases and presents clinical and anatomic evidence to show that the accident causing the dislocation in the first place had not caused a lengthwise tear in the capsule but had torn the capsule loose from its attachment to the humerus or scapula. The retracted, jagged edges were unable to coaptate spontaneously and connective tissue grew into the gap. This answered the purpose in some cases but in others the least overstrain tore the connective-tissue bridge and the dislocation returned. This explanation of the causes of habitual dislocation is sustained by the frequent relapses after treatment by the most approved methods, operative or otherwise, had been applied to twenty-six shoulders (twenty-three patients) as he describes in detail. One patient, a man of 60, had had the dislocation return eleven times; an injection of blood into the joint warded off recurrence for eighteen months at one time. Schultze declares further that the changes in the bones, etc., are all secondary to this tearing off of the capsule from the bone. The proper treatment, he says, is to expose and examine the joint from the axilla, at the lower margin of the pectoralis. If there are no pathologic changes the capsule can be effectually closed by a suture. If the capsule stump has retracted and shriveled, he draws it down and sutures it, thus making the capsule cavity smaller and then over the suture nails to the bone a well-fitting flap of fascia. This technic has been applied to date only on the cadaver but it proved extremely simple and the joint afterward effectually resisted all attempts to dislocate it anew.

67. **Operative Treatment of Movable Kidney.**—Scheuermann reviews the experiences in 189 cases of wandering kidney in which Rovsing's method was applied, nearly a hundred pages being devoted to the report which has no illustrations. He gives a historical sketch of the subject of

wandering kidney and the measures that have been tried to relieve it. Experience has finally taught, he says, that decapsulation in connection with suture of the capsule proper is the most reliable procedure while it makes the least demands on the patient. The kidney is drawn up into the incision; the latter skirts the margin of the erector spinae, from the tenth rib to 2 cm. below the twelfth, where it turns forward at a sharp angle for 6 or 8 cm. The drawn up organ is cleared from all adhesions with scrupulous care and the true capsule is incised along the convex margin of the kidney with a short transverse incision at each pole. The capsule is then turned back on each side, leaving a rectangular opening. A stout silk thread (No. 4 English) is then carried around the lower pole of the kidney weaving it in and out of the true capsule beyond the area of the incision. This suspends the lower pole as in a sling and the kidney is then restored to place. The ends of the silk are brought out separately each side of the incision in the skin.

When the kidney is thus pushed and drawn up into its normal place, with room for normal play, the patient is turned on his back and is not allowed to get up for four weeks. The threads are removed the third week. In the uncomplicated cases all trouble was permanently at an end after the operation in 85 per cent.; adding to these the improved cases, 95.4 per cent. of the patients were cured or materially benefited. The decapsulation ensures adhesions which anchor the kidney firmly in place to the transverse fascia, and not to fat tissue. The parenchyma is left intact. The necropsy in a few cases after death from intercurrent disease and in animals confirmed the reliable outcome. The cases in which symptoms recurred are analyzed seeking for the cause. One of the patients died from peritonitis, suppuration occurring along the course of the silk. This is the only one of the four deaths for which the operation can be held responsible. It suggests that silk impregnated with silver nitrate might be preferable.

Berliner klinische Wochenschrift

March 30, LI, No. 13, pp. 581-628

70 Progress in Treatment of Syphilis. J. Citron.
71 *Pathogenesis of Pernicious Anemia. A. Cederberg.
72 Prophylaxis of Cholera in Servia, 1913. Aumann.
73 *Operations to Relieve Pressure on Sciatic Nerve. (Druckentlastende Operationen bei Ischias.) B. Heile.
74 *Optic Estimation of the Blood-Pressure. (Die Lehre vom Blutdruck und die optische Blutdruckmessung.) S. Federn.
75 Keratohyalin. (Zur Chemie der Zelle. V.) P. G. Unna.
76 Origin of Cancer. (Entstehung des Krebses.) A. Theilhaber.
77 Powder Treatment of the Vagina. (Zur Puderbehandlung des weiblichen Fluors.) H. Oppenheim.

71. **Causes of Pernicious Anemia.**—Cederberg presents evidence to sustain his view that pernicious anemia is the result of a kind of anaphylaxis which is brought about by the products of break down of protein getting into the blood by seeping through a constitutionally inferior intestinal wall. We know this to be the cause of the anemia when certain helminths render the intestinal wall permeable and we know that the patients recover when the helminths are expelled. In the essential form the intestinal walls become naturally permeable and the blood suffers from this continuous parenteral supply of the products of protein metabolism. He elaborates this theory and shows how it explains numerous phenomena. The practical conclusions are the necessity for restricting to the lowest possible minimum the intake of alien albumin. The intestines may be able to take care of a small amount and assimilate it completely, leaving none to get into the parenteral circulation. It may be possible further to supply the needed albumin in a form which is free from the dangers of the ordinary forms now used.

73. **To Relieve Pressure on Sciatic Nerve.**—Heile discusses the preferable technic for operative relief of pain from pressure or traction on the sciatic nerve, after failure of internal measures. He has found acute sciatica, especially sciatica developing after an accident, much easier to cure than moderate sciatica in patients with a familial tendency to rheumatism. When severe sciatica persists unmodified by persevering internal treatment, he injects 100 or 200 c.c. salt solution directly into the nerve. This loosens up the fibers and may break up adhesions that have formed between the fibers and the sheath of the nerve. He makes the injection just as the nerve emerges from the sacrosciatic foramen, at the center of a line drawn from the superior posterior spine to the tuberosity of the ischium. In four exceptionally severe cases of years' standing in which no measures had given but transient relief, he cured the sciatica at one stroke by the following operation, the interval since up to fifteen months. He exposed the nerve where it pierced the pelvis, opened the outer sheath and separated a network of adhesions inside. He ran his finger into the foramen to learn if there was any pressure on the nerve beyond and found it necessary in one case to excise the arteria comitans or the pyriform muscle as they seemed to press on the nerve. He concluded by injecting salt solution into the nerve beyond the point he could reach. The nerve thus carefully isolated was buried between the fibers of the gluteal muscle, drawn apart for the purpose. The results in these desperately chronic and agonizing cases were so surprising that he does not wait for further confirmation to publish the method. When a preliminary injection relieved pain, even temporarily, this indicated that mechanical factors were involved, and the case seemed promising for permanent operative relief in this way. The same principle can be applied to other nerves. There were never any symptoms suggesting impairment of function of any of the fibers of the nerve afterward.

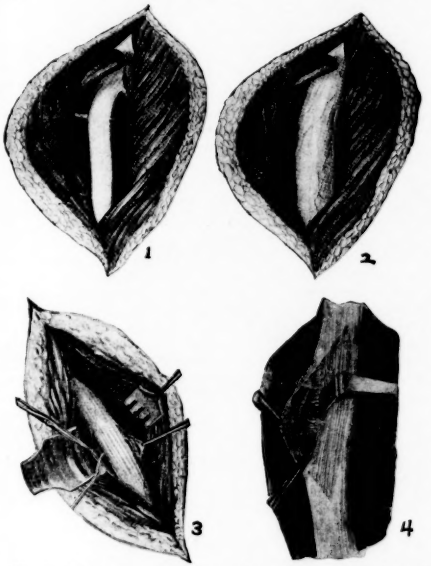

Fig. 1.—Sciatic nerve as it emerges from the sacrosciatic foramen unmodified.
Fig. 2.—Sciatic nerve after intraneural injection of salt solution.
Fig. 3.—Sciatic nerve after stripping off the perineurium, without adhesions.
Fig. 4.—Sciatic nerve with adhesions extending to the perineurium.

His experiments on the cadaver show that this skeletonizing of the nerve, as he calls it (*Skelettierung*), is very simple and easily done, the perineurium stripping off readily. It seems to be thicker than usual in the sciatica cases—further testimony to preexisting inflammation. In the four cases reported there was "trunk sciatica" in one, and in two others plus irritation in the lumbar plexus which he regards as evidence of "root sciatica," plus scoliosis and tenderness in the crest of the ilium. In all the cases he removed the

outer sheath entirely and stripped off as much as possible of the tissue binding the fibers together. The separate bundles of nerve fibers then lay entirely isolated, connected only by the anastomosing nerve fibers. He removed only such parts of the membrane as could be stripped off easily.

74. **Optic Estimation of the Blood-Pressure.**—Fedem expatiates on the importance of the state of the blood-pressure, insisting that this is as important for internal medicine as infection for surgery, and that only when this is generally appreciated will we be able to utilize to the full the recent achievements in the medical sciences. He published his first article on the subject in 1894, but his statement that the blood-pressure varies materially at different points in the body seemed so revolutionary that no one took the trouble to control his statements. But he declares that time has only confirmed the importance and value of his findings and he has been all these years perfecting a method within the reach of every practitioner and requiring only good eyesight. All methods of estimation of the blood-pressure which depend on compression of a large area, as with the Riva-Rocci cuff, render anemic the capillaries in this large area and thus modify the local blood-pressure and render the findings variable and unreliable. This source of error is avoided with the Basch bulb which compresses merely the artery alone. A straw stuck to the skin at the point where we usually palpate the pulse moves with the pulse. The pulse is thus rendered evident to the eye; the straw responds even more sensitively than the finger can feel the pulse. He measures the blood-pressure in a small artery over the tibia, and in the superior anterior intercostal artery, in addition to the arteries ordinarily examined. The pressure in this intercostal artery shows at once the functional capacity of the heart while the artery in the tibia shows the curve in the blood-pressure from one menses to another, and often gives notice when conception has occurred. It may be necessary to examine the straw index through a magnifying glass, one mounted like a telescope, to detect its movements. The straw index is fastened to a disc of paper or cork, 5 to 6 mm. in size, and this is stuck to the point where the pulse is felt. Then pressure is applied to the artery above with the Basch sphygmomanometer. When the flow of blood through the radial artery, for instance, is arrested by pressure from the Basch bulb, the straw indicator stops moving. But soon it starts up again to move, and no amount of pressure on the artery above can stop it, and this occurs just the same whether the indicator is glued to the point where the radial pulse was formerly perceptible or on regions near by where no pulse could be detected previously. The compression of the artery has altered conditions in the local circulation so that pulsation is evident where there is no artery, merely capillaries in the region. His optic method of determining the blood-pressure is thus based on the pressure in the capillary system, and he asserts that the findings are constant and instructive, with a precision beyond that of any other method to date. The article is not illustrated.

Deutsches Archiv für klinische Medizin, Leipsic

CXIII, Nos. 5 and 6, pp. 441-632. Last indexed April 4, p. 1127

78 Multiple Myeloma with Bence-Jones Albuminuria and Metastasis in the Right Tonsil. H. Schultz.
79 *Too Much Importance Attached to Lymphocytosis in Diagnosis. G. Huhle.
80 *Blood-Pressure and Energometer Exami ations at High Altitudes in Cardiovascular Disease. P. Schrumpf.
81 The Venous Pulse. E. Veiel and W. Kapff.
82 Aphasia in the Japanese. T. Asayama.
83 The Production of Meat Intoxication in Dogs with Eck's Fistula. F. Fischler.
84 Influence of the Vagus on the Human Heart. H. v. Hoesslin.
85 Sugar Content of the Blood. H. T. Bing and B. Jakobsen.
86 Effect of Internal Secretion on Dentition and Development of the Hair. A. Josefson. See editorial, p. 1334.
87 Drug Tests of the Vegetative Nervous System. M. Wentges.

79. **Lymphocytosis.**—Huhle examined the blood in 110 cases of nervous disorders in some of which there were also organic diseases, including disease of the liver and heart muscle, infectious diseases, blood disorders and disturbances of metabolism. Aside from the cases in which lymphocytosis was to be expected, he found it present in forty-five cases without any apparent reason. He thinks entirely too much importance is attached to it in diagnosis. In a non-febrile adult with repeated examinations we should pay no attention to a lymphocytosis of less than 35 to 40 per cent. This would exclude many cases now regarded as lymphocytosis, and a new basis would have to be established for the evaluation of the condition.

80. **Effect of High Altitudes in Disease of the Heart and Vessels**—Schrumpf considers altitudes only up to 7,000 feet. It is generally assumed that it is dangerous to send patients with any form of heart disease to a high altitude, and this is based on the belief that blood-pressure is increased at such altitudes. Schrumpf shows by tabulated findings in a number of cases that pathologic blood-pressures are improved, that is, high pressures are reduced and low ones increased, together with an improvement in the general condition. He says that a high altitude is actually indicated in some forms of heart disturbance, such as those in anemia, sclerosis, too rapid growth in adolescence, general asthenia, toxemias, the uric-acid diathesis, mild arteriosclerosis, fatty heart, nervous arhythmia and vasomotor neuroses. Compensated valvular lesions and mild cases of myocarditis were also favorably influenced in his experience by high altitudes. The mountains are directly contra-indicated in uncompensated valvular lesions and particularly in coronary sclerosis. In all cases care should be exercised in changing from a low to a high altitude, the change should be gradual, with repose at first for a day or two.

Deutsche medizinische Wochenschrift, Berlin

March 26, XL, No. 13, pp. 625-680

88 Treatment of Acute Threatening Sinusitis. (Nebenhöhleneiterungen.) O. Kahler.
89 *Acute Leukemia. J. Citron.
90 *Professional Injury from Radio-Active Substances. F. Gudzent and L. Halberstaedter.
91 Technic for Serodiagnosis. (Einfluss des Blutgehaltes der Substrate—Organe—auf den Ausfall der Abderhaldenschen Reaktion.) A. E. Lampé and G. Stroomann.
92 Combined Electrocardiography and Sphygmography. E. Veiel.
93 *Pernicious Anemia in Pregnant Women. (Perniziöse Anämie und Gestationsvorgänge.) A. Wolff.
94 Leukocytosis in Small-Pox and after Vaccination. (Das Blutbild bei Pocken und Impfpocken. II.) E. Erlenmeyer and E. Jalkowski.
95 Epithelial Nodules in Palates of Young Children. (Funktionelle Bedeutung der sogen. Epithelperlen am harten Gaumen von Feten und Kindern.) K. Peter.
96 Ejaculation Impotency. (Seltene Potenzstörung.) G. Flatau.
97 Friedmann's Comment on the Fatality after His Remedy; Reply. (Zur Frage der Giftigkeit des Friedmannschen Tuberkulosemittels.) F. F. Friedmann, O. Vulpius and K. Laubenheimer.

89. **Acute Leukemia.**—Citron reports the case of a previously healthy and well-to-do man of 50 who developed acute leukemia with hemorrhages from the mouth and death from progressive weakness in six months. The man had been a vegetarian for many years and scorbutus had been the diagnosis at first until examination of the blood showed typical micromyeloblast leukemia. In a second similar case nothing but examination of the blood gave the clue to the clinical picture. Citron draws the important lesson from his study of these cases that leukemia is unmistakably an infectious disease and that acute leukemia develops when the virus attacks a person constitutionally inferior, such as with the thymic-lymphatic status or an organism that has been artificially placed in a condition analogous to the thymic-lymphatic status by exposure to the Roentgen rays. The mobilization of leukocytes is the response of the organism to the invading virus, and we are on the wrong track, he declares, when we attempt to destroy the leukocytes unless they are mobilized to such an extent as to be directly mechanically injurious. Until we learn what the virus is, and can thus treat leukemia understandingly, it is better, he declares, to acknowledge our helplessness rather than to cradle our patients in illusions of therapeutic measures which go counter to what we already do know.

90. **Professional Injuries from Radio-Active Substances.**—In six of the twelve cases reported the patients were connected with the radiotherapy department of the Charité hos-

pital at Berlin; the others were physicians using radio-active substances or employees in industrial establishments where they were produced. The disturbances were in the form of changes in the blood picture and impairment of the genital glands, lassitude, drowsiness, headache, attacks of vertigo, slight syncope, etc. In two cases the menses were retarded. Lymphocytosis was marked in all while the neutrophils dropped off. Characteristic changes also developed in the skin, paresthesia and loss of finer sensitiveness in the fingers, pain on grasping articles, and in the severe cases spontaneous and sometimes very severe pains in the fingers. The skin grows smooth and leathery, horny deposits develop around the nails, the fingers do not sweat and the nails tear at the tip and become deformed. To date none of these changes is serious, but the experience with Roentgen-ray burns warns of the necessity of caution. The radium and radio-active substances should be handled only with long tongs or forceps, never letting the fingers touch them. The specimens should be mounted with a rubber handle whenever possible. Work-rooms should be thoroughly ventilated to get rid of the emanations, and the work-table should be covered with metal to protect the worker's body. The workmen should be changed about often so that the hours at such work should be short and alternate with other work. Those working on radio-active substances should be under repeated medical supervision and have their blood examined at least twice a year.

93. **Pernicious Anemia in Pregnancy.**—Wolff states that he has been able to find on record only twenty cases of pernicious anemia developing during pregnancy in all Germany since 1872. He recently encountered a case of the kind in a previously healthy woman of 22. The pernicious anemia came on during the second half of her first pregnancy and after delivery spontaneously retrogressed to a considerable extent. In fifteen of the cases on record the pregnancy was interrupted, hoping thus to arrest the pernicious anemia, but twelve of these women died. Transfusion of blood has rendered good service in a number of cases, and there is always hope that the anemia may subside after spontaneous delivery so that expectant treatment seems the best under the circumstances as a rule. In eleven cases the children were alive at last accounts.

Medizinische Klinik, Berlin

March 29, X, No. 13, pp. 529-572 and Supplement

98 *Slow Endocarditis. (Endocarditis lenta.) E. Stadler.
99 Lead-Poisoning from Water-Pipes. (Bleivergiftungen durch Wasserleitungen.) H. Klut.
100 Pregnancy Serous Meningitis. (Eine durch die Schwangerschaft bedingte schwere Hirnerkrankung.) G. L. Dreyfus and M. Traugott.
101 *Treatment of Peritoneal Adhesions. F. Kirchberg.
102 The Electric Pocket Lamp in Diagnosis of Frontal Sinusitis. A. v. Sarbo.
103 Syndrome Resembling Unilateral Paralysis Agitans. G. Mingazzini.
104 Topography of Brain and Skull. (Der fehlende Ausgleich der Schädelmasse bei anatomisch bedingten Funktionsstörungen des Gehirns.) L. Wolfer.
105 Bronchial Disease in Children. L. Jehle.

98. **Protracted Endocarditis.**—Stadler remarks that this disease always terminates fatally notwithstanding its comparatively mild course. The only hope seems to be in attacking it early with both serum and vaccine. Grip, tonsillitis or bronchitis is generally the precursor, a miscarriage or difficult delivery. Slight pains in the joints and general depression are the first symptoms, and the rapid enlargement of the spleen suggests impending trouble. In the case described in detail eight months elapsed between the first symptoms and death. The *Streptococcus viridans* was cultivated from the blood during life. The clinical picture varies from day to day, now high fever with lung and brain symptoms and again nothing but splenomegaly and anemia, but always signs of an old valvular defect. The patients with endocarditis lenta are generally distinguished further by extreme optimism, like the euphoria of consumptives, which renders the physician's task much easier.

101. **Suction-Pressure Treatment of Peritoneal Adhesions.**—Kirchberg reports good results in breaking up adhesions, inducing local hyperemia, etc., in the abdomen by alternately aspirating a certain area into a big vacuum bell and then applying pressure with compressed air. He gives illustrations showing how the viscera can thus be drawn about, lifted up and down, the circulation and peristalsis stimulated and promoted, adhesions diagnosed and broken up, even flat adhesions over a considerable area. His glass bell is worked in connection with a tank of oxygen or compressed air, and it is proving exceptionally effectual also in lumbago, the patient lying prone. He has found it best to cover the entire abdomen at first with a big glass, and follow with a smaller bell for the special area in question.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

March, XXXIX, No. 3, pp. 269-458

106 Negative Effect of Gynecologic Treatment in Psychiatry. E. Siemerling.
107 *Effect of Radium and Mesothorium Treatment of Carcinoma of Uterine Cervix. W. Lahm.
108 Causal Treatment of Uterine Hemorrhage. G. Schickele.
109 Intravenous Injection of Arthigon in Gonorrhea in Women. S. Mgos.
110 Case of Congenital Opening of the Anus into the Urethra. P. Kreiss.

107. **Effect of Radium and Mesothorium Treatment on Carcinoma of the Cervix.**—Lahm gives a detailed histologic description of the tissue of a carcinoma of the cervix treated by irradiation, and concludes from it that the effect of radium and mesothorium on such tumors is indirect. Increased numbers of leukocytes are brought to the part and they destroy the cancer cells by phagocytosis. There are cholin and lecithin combinations in the cancer cells which attract the action of the leukocytes and antiferments in the normal body cells which protect them. As the cancer cells are digested by the proteolytic ferments in the leukocytes, they are carried into the blood-stream and gradually bring about immunization by autovaccination.

Münchener medizinische Wochenschrift

March 24, LXI, No. 12, pp. 633-688

111 *The Importance to Science of the Paranoiac Wagner. R. Gaupp.
112 Diagnosis of Paranoiac States. T. Becker.
113 Roentgenoscopic Diagnosis of Type of Pulmonary Tuberculosis in Children. (Anatomische Typen der kindlichen Lungentuberkulose.) E. Rach.
114 Pathology of Trichinosis. G. B. Gruber.
115 *Fever in Infants after Saline Infusion. Rietschel, Heidenhain and Ewers.
116 *Hydraulic Method for Artificial Separation of the Placenta. J. A. Gabaston.
117 Potent Elements in Antigens for the Wassermann Reaction. W. Klein and E. Fränkel.
118 Case of Atypical Tubercle Bacilli. V. F. Moller.
119 Operative Treatment of Severest Forms of Flat-Foot: Severing Ligaments Alone May Suffice. (Plattfuss.) F. Berndt.
120 Impalement Injuries; Eleven Cases. (Pfählungsverletzungen.) K. Lexer.
121 Mechanism of the Absorption of the Lens in the Eye. (Abbau und Resorption der Linse und ihrer Abbauprodukte.) M. Goldschmidt.
122 Case of Retinal Hemorrhages after Calomel-Salvarsan Treatment. (Netzhautblutungen nach Kalomel-Salvarsanbehandlung.) F. Morpurgo.
123 *Boas' Extra-Anal Treatment of Hemorrhoids. Müller.
124 Nomenclature for Radiotherapy and Dosage. (Zur Massbezeichnung der Strahlendosis bei der Radium- und Mesothoriumtherapie.) G. Klein.

111. **Psychology of the Wagner Case.**—The scholarly, kindly, highly esteemed and happily married principal of a school in Germany shocked the world last September by cutting the throats of his wife and four children, then hurrying to a town where he had formerly lived, setting fire to it in four different quarters and shooting down the people as they ran out of the houses. He thus had killed thirteen persons and seriously injured twelve others and two cows before he was overpowered. The assumption of acute mania was disproved by his diary which showed that the paranoiac brain had planned this series of events years before and kept it constantly in mind and carried it out in every detail except that it did not reach its planned conclusion which was the burning of still another village and his own final suicide.

The diary is a unique psychiatric document as it mirrors the workings of a paranoiac brain over a period of twelve years, portrayed by a fluent and scholarly writer. The very

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inception of the paranoia can be traced and the preponderant influence of emotions. The pathologic element is the intensity and the permanence of the special emotions, not the cause of the emotions.

115. **Fever after Saline Infusion in Infants.**—Evidence is here presented that traces of copper from the vessels in which the water is distilled are responsible for the rise in temperature sometimes observed after injection of salt solution in infants.

116. **Injection of Fluid into the Placenta to Aid in Its Separation.**—Gabaston injects physiologic salt solution through the umbilical vein into the placenta when it is not spontaneously cast off. Study of the way it works on an expelled placenta shows that the fluid distends the big vessels and the placenta straightens up and spreads out; finally the delicate vessels at the rear burst and the injected fluid pours out of the uterine aspect of the placenta. With the placenta still clinging to the uterus wall, accumulation of fluid behind must gently pry it apart from the wall, while the size of the placenta thus in erection, as it were, stimulates the motor function of the uterus. The fluid seeking to escape from the uterus will help in the expulsion of the afterbirth. The procedure, he says, proved harmless and ideally effectual in the one case in which he has had occasion to apply the method to date. He injected under pressure from a rubber bulb 2 liters of warm salt solution into the placenta when the uterus of a primipara had shown total atony for an hour and a half. The olive tip of the cannula was tied in the vein. In seven minutes a vigorous contraction of the uterus was apparent, soon followed by others and in twelve more minutes the afterbirth was expelled intact.

123. **Extra-Anal Treatment of Hemorrhoids.**—Müller writes to express his gratitude for the way in which he cured himself of severe hemorrhoids by following Boas' instructions to the letter for the extra-anal treatment. (It was described in THE JOURNAL, 1912, lviii, p. 742.) The principle seems to contradict all that has been taught in regard to treatment of hemorrhoids, but what matters theory? The one essential is that the patient is cured.

Wiener klinische Wochenschrift, Vienna

March 12, XXVII, No. 11, pp. 261-288

125 *Edema and Hemorrhages from Poisons; Toxins of Intestinal Origin. L. Hess and H. Müller.
126 *The Tuberculin Contrast Phenomenon. W. Egert.
127 Paralysis Agitans in Man of 38. G. Stiefler.
128 Serodiagnosis of Cancer and Helminthiasis. (Die Abderhaldensche Fermentreaktion bei Karzinom.) G. M. Fasiani. (Abderhaldensches Dialysierverfahren bei Helminthiasis.) E. Manoiloff.
129 Torsion of Uterus from Myoma with Supravaginal Auto-Amputation. L. Ruppert.

March 19, No. 12, pp. 289-308

130 Chemistry and Toxicology of Dysentery Toxin. P. Kirschbaum and S. Fränkel.
131 *Regeneration of Long Bone from Bone Implant. (Zur Knochentransplantation im Defekte von Röhrenknochen.) Korencan.
132 Operative Treatment of Pancreas Cysts. V. Roic.
133 Acute Tuberculosis without Tuberculous Focus. (Zur Typhobazillose Landouzys.) A. Krokiewicz.
134 Statistics in Regard to the Profession in Austria. (Aerzte in Oesterreich, Ende 1913.) O. Klauber.

March 26, No. 13, pp. 309-356

135 Tonic Innervation. A. von Tschermak.
136 New Light on Kidney Diseases. (Zur Klinik der Nierenerkrankungen im Lichte der neuen funktionellen Prüfungsmethoden.) R. Bachrach and R. Löwy.
137 Technic for Wassermann Reaction. (Wasserfehler.) R. Matzenauer and M. Hesse.
138 Determination of Residual Nitrogen in the Blood. (Verleichende Bestimmungen des Retentionstickstoffes im Blute nach Yvon u. nach Kjeldahl.) R. Hertz.
139 Heart on the Right Side. (Dextroversio cordis.) J. H. Botteri.
140 Weight of the New-Born in Relation to Mother's Circumstances. S. Peller.
141 Overcrowding in the Medical Schools. (Einschränkung des Zudranges zum Studium der Medizin.) Hochenegg.

125. **Toxic Anemia.**—In this third communication on anemia due to the action of poisons, Hess and Müller describe extensive research on rats by intravenous injection of various aromatic and other substances. The most striking result was obtained with phenyl-oxyphenylamin or imidazolethylamin. Injections of these substances induced anemia of the pernicious type. They accept this as evidence that the intestinal mucosa under the influence of the bases formed in it under certain circumstances, belongs among the blood-destroying organs. Pyrodin and toluylendiamin injured the capillaries to such an extent that pronounced edema resulted. The amins caused both edema and hemorrhages, while the substances like putrescin, derived from the body, induced severe anemia.

126. **The Tuberculin Contrast Phenomenon.**—Egert calls attention to the difference between the local reaction at the point where Pirquet's skin test is applied and at the point where the subcutaneous injection is made. With active tuberculosis in younger children the skin reaction is pronounced while there is scarcely any reaction at the point of the subcutaneous injection. But as the child recovers, the findings become reversed; the subcutaneous local reaction becoming marked while the skin reaction is minimal. This may help in the prognosis; at present he does not know how to interpret this "contrast phenomenon."

131. **Regeneration of Long Bone.**—In Korencan's case a piece of the femur, 11.2 cm. long, had to be resected on account of periosteal sarcoma on a boy of 9. The shaft was cut away leaving merely a strip of periosteum 2 cm. wide on the sound side of the bone. A corresponding piece of the boy's fibula with its periosteum was implanted in the gap, but fistulas developed and the necrotic implant had to be taken out. Its periosteum was evidently left in place, and bone tissue proliferated so rapidly that in the course of a few months the boy was using his leg normally and freely. Four years later the femur presents an approximately normal structure and shape except that it is bent somewhat. There even seems to be a marrow cavity.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXXV, No. 3, pp. 493-820. Last indexed February 14, p. 580

142 The Electrometrogram of Animals. E. Blumenfeldt and A. Dahlmann.
143 *Alcohol Alone Possesses the Property of Seeping Deep into the Skin. (Der Kernpunkt in der Frage von der Bedeutung des Alkohols bei der Handedesinfektion.) F. Ahfeld.
144 *The Hydrorrhea Question. T. H. van de Velde.
145 *Bacteriologic Findings in 200 Cases of Post-Partum Fever. P. Werner and J. v. Zubrzycki.
146 *Recent Reexamination after Extraperitoneal and Transperitoneal Cesarean Section. W. Rohrbach.
147 Etiology of Endogenous Puerperal Infection. S. Seligmann.
148 Sarcoma of Uterine Cervix. (Zur Kenntnis der heterologen mesodermalen Neubildungen des Gebärmutterhalses.) W. Beckmann.
149 *Puncture as Curative Measure in Gynecology. (Probepunktion als Heilmittel.) N. M. Kakuschkin.
150 Histogenesis of Ovarian Cystoma. (Sogen. Struma ovarii.) E. Bauer.
151 Action of Extracts of Thyroid, Ovary and Placenta on Isolated Rabbit Uterus. J. Fuchs.
152 *Myomas of Uterine Cervix and Technic for Removal. G. Schickele.
153 Physiology and Technic for First Breast-Feeding. H. Rietschel.
154 Intervals between Feeding the Newly Born. (Zahl der Mahlzeiten beim Neugeborenen.) R. T. Jaschke.

143. **Alcohol in Sterilization of the Hands.**—Ahlfeld reaffirms that alcohol owes its unique efficacy in local sterilization to its power of penetrating deep into the tissues and thus being able to destroy the superficial and the deep germs. Others admit this deep diffusion but think there is no bacteridal action unless the alcohol carries some disinfectant with it.

144. **Hydrorrhea.**—Van de Velde distinguishes between leakage from the fetal membranes and flow of fluid from the gravid uterus elsewhere. His experiments with intramuscular injection of methylene-blue confirmed this distinction.

145. **Bacteriology of Puerperal Fever.**—In the 200 cases examined a number of different germs were found but none seemed to induce a special syndrome. Consequently bacteriologic examination is of little practical value in general except when an operation is contemplated. Then the discovery that the blood is swarming with germs renders the outlook less favorable. Veit takes this as his guide; if he finds quantities of bacteria in the blood on repeated examination, independent of rises in temperature or chills, he regards the bacteria as too virulent to permit recovery from the sepsis. On the other hand, if the blood is sterile

or only isolated germs are found in the blood during a chill, he unconditionally advocates an operation.

146. **After Cesarean Section.**—Rohrbach states that cesarean section has been done in 117 cases in Küstner's service since 1908, and reports the findings on recent reexamination of 38 of the women. There were no disturbances in bladder functioning, no interference with the earning capacity and the scar in the cervix with the extraperitoneal technic does not seem to jeopardize future childbirths. No adhesions had developed afterward and the uterus was found in normal position in 82 per cent. and in the other cases the displacement was readily corrected as the uterus was not held by adhesions. All the children were delivered alive, and 81.5 per cent. were living months or years later. The classic technic was applied in only six cases; in all the others the extraperitoneal. Development of hernia later is a possible drawback to all cesarean section operations, whatever the technic. It occurred in about 7 per cent. of the above cases, the extraperitoneal technic showing the smallest proportion to date.

149. **Curative Influence of Exploratory Puncture in Gynecology.**—Kakuschkin refers in particular to old inflammatory exudates in the pelvis, advocating for them systematic puncture with aspiration of some of the fluid. This alters conditions in the region, circulation is improved, the trauma from the puncture and the aspiration stimulates repair in general, and very often the exploratory puncture is followed by a drop in temperature and reabsorption of the products of inflammation. In case of a recent exudate, with virulent content, the temperature may not be modified or it may even go up under the influence of the puncture. The therapeutic effect can be counted on only in the older cases. As an example of what can be accomplished in this group he reports its success in a case of acute flaring up of an old bilateral inflammation of ovaries or tubes. There was high pus fever for several weeks and the inflammation caused a large tumor to form. The tumor was punctured but no pus came, and he proceeded to aspirate the contents at various points puncturing through the posterior vaginal roof, keeping up the aspiration by piston suction for a minute or two at each of the six punctures at a sitting. The temperature ran up at once to 104 F., but the next day it began to go down and reached normal in five or six days.

He uses an ordinary syringe and punctures through the roof of the rear of the vagina, with rigorous asepsis and care to avoid puncturing in the side. The needle is introduced under the guidance of the fingers through a short speculum. The pain from the puncture is sometimes sharp but it is briefly transient. He ascribes the benefit in the main to the local hyperemia induced by the trauma. The details of a dozen cases are given and the method of therapeutic puncture and aspiration commended for all torpid chronic gynecologic processes. He has found it more convenient to have the piston moved by a thumb-screw than by pulling out the handle, and a long tube between the syringe and needle adds to the convenience of the procedure.

152. **Myoma in Uterine Cervix.**—Schickele gives thirty-one illustrations of cervical myomas and the best technic for operative removal.

Zeitschrift für Kinderheilkunde, Berlin

X, Nos. 5 and 6, pp. 353-508. Last indexed April 18

155 Plethysmograph not Adapted for Determining Volume of Blood in Children. R. Hess and S. Gardin.
156 Importance of Water in the Nutrition and Pathology of Children. R. Lederer.
157 Eosinophilia not a Symptom of the Exudative Diathesis. E. Aschenheim.
158 Eosinophilia a Symptom of the Exudative Diathesis. H. Putzig.

Zentralblatt für Chirurgie, Leipsic

March 28, XLI, No. 13, pp. 545-584

159 Clamps to Hold Stumps after Fracture. (Klammerung als Methode zur Koaptierung der Bruchenden mit Verschiebung.) F. v. Fink.
160 Improved Technic for Operative Treatment of Tuberculous Spondylitis. (Zur Albee'schen Operation beim Spondylitis tuberculosa.) K. Vogel.
161 Fascia Sling in Treatment of Prolapse of the Rectum. A. T. Jurasz.

Zentralblatt für Gynäkologie, Leipsic

March 28, XXXVIII, No. 13, pp. 465-504

162 Experimental Study of Effect of Radium. (Protektive Wirkung der Radiumemanation auf die sekundären Sexualcharaktere der Tritonen.) J. Halban.
163 Prophylaxis of Peritonitis in Operations in the Small Pelvis. No Contact with Gut Allowed When It Slides Down. E. Haim.
164 Overlooked Sponges. (Zur Kasuistik in der Bauchhöhle vergessener Gazekompressen.) O. Gerich.

Policlinico, Rome

March 22, XXI, No. 12, pp. 409-444

165 *Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis; Eighteen Cases. U. Carpi. Commenced in No. 11.

March 15, Surgical Section, No. 3, pp. 105-152

166 Appendicitis with Mechanical Intestinal Obstruction. (L'ileo meccanico da appendicite.) N. Loetta.
167 Megacolon Plus Appendicitis; Two Cases. O. Cignozzi.
168 Tuberculous Process in Tendon Sheath. (Caso tubercolosi pseudoneoplastica delle guaine tendinee.) G. Beccherle.
169 *Intestinal Invagination from Ascarides; Two Cases. N. Novaro.
170 Adhesions Binding Cecum and Colon. (Le aderenze pericecali e pericoliche.) N. Leotta.

165. **Artificial Pneumothorax.**—Carpi states that the pulmonary tuberculosis progressed to a fatal termination in 3 of the 18 cases in which he made a therapeutic pneumothorax. One of the other patients was completely cured after a three years' course of treatment; 3 are clinically cured now in the second or third year of treatment; 2 are clinically cured although the pulmonary process was complicated by an intestinal tuberculous affection; 5 others are apparently clinically cured; 1 patient had a spontaneous pneumothorax which was kept up by artificial means, and 3 other patients with tuberculous processes in both lungs were materially improved by compression of the lung most seriously affected. The results were thus extremely gratifying in all but 3 of the total 18 cases.

169. **Invagination from Ascarides.**—One was a child of 5, one an infant of 14 months and both required an operation. The older child had swallowed a hat pin, which could be seen in the cecum on roentgenoscopy. The invagination was a surprise; the intestine was packed with ascarides.

Upsala Läkareförenings Förhandlingar

XIX, Nos. 2-3, pp. 99-215. Last indexed January 10, p. 174

171 *Production of Light by Living Organisms. (Ljusproduktion hos lefvande organismer.) G. F. Göthlin.
172 New Views on Etiology of Pulmonary Tuberculosis. (Nyare åskådningar angående lungsotens uppkomstsätt.) R. Friberger.
173 The Muscle Sense. (Det s. k. muskelsinnet.) H. Ohrvall.
174 *Non-Tuberculous Hip-Joint Disease in the Young. G. Söderlund.
175 The Connective Tissue and Smooth Muscle Apparatus of the Orbit. (Orbitans bindväfsapparat och glatta muskulatur i normalt tillstånd hos människan.) C. Hesser.

171. **Light-Producing Living Organisms.**—Göthlin reviews what has been written on this subject and gives an illustrated description of the principal living organisms that generate light, comparing the solar spectrum with the spectrum of the light generated by the *Pyrophorus noctilucus.*

174. **Deforming Juvenile Osteochondritis.**—Söderlund adds three cases to the few on record of this affection to which Perthes seems to have been the first to call attention last year. He had then collected twenty-one cases. Roentgenoscopy shows a characteristic picture, a loosening up of the abnormally small and flat epiphysis. There are islands of cartilage in the spongiosa of the head but there are no signs of inflammation. Tuberculosis does not seem to be involved, and the process gradually heals so that no active measures are needed for it. The limping, the absence of pain, the restriction to one side and the impossibility of abduction in the hip joint are the main features of the affection. Söderlund attributes it to some anomaly in the upper end of the femur, and this entails or is supplemented by some developmental disturbance, possibly abnormal ossification of one or both of the epiphyses. As this trouble is proving unexpectedly frequent, he urges systematic Roentgen-ray examination of the hip and other joints in a large number of children between 3 and 10, even when all is apparently normal. The practical importance of the above affection is that it may not be mistaken for a tuberculous hip joint process. (See abstr. 141, April 18, 1914, p. 1294.)

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